PROJECT	DESIGNATION
PB-14-0004	PB-14-0004
CONTRACT	BRIDGE FILE
	Hamilton Co. Br. 306

STRUCTURE	TYPE	SPAN AND SKEW	OVER	STATION
HAMILTON CO. BRIDGE	REINFORCED CONCRETE SLAB	27'-0" SPAN 25°00'00" SKEW	FRANK KEISER DRAIN	59+48.00

HAMILTON COUNTY HIGHWAY DEPARTMENT

REPLACEMENT PLAN FOR SMALL STRUCTURE NO. 23034 (BRIDGE NO. 306) CYNTHEANNE ROAD OVER FRANK KEISER DRAIN WAYNE TOWNSHIP PB-14-0004

REPLACEMENT OF HAMILTON COUNTY SMALL STRUCTURE NO. 23034 (BRIDGE NO. 306). CYNTHEANNE ROAD OVER FRANK KEISER DRAIN, 0.42 MILES NORTH OF 146TH STREET. LOCATED IN SECTION 17 & 18, T18N, R6E IN WAYNE TOWNSHIP, HAMILTON COUNTY, INDIANA

APPROVED BY:
HAMILTON COUNTY BOARD OF COMMISSIONERS

Date: May 22, 2017

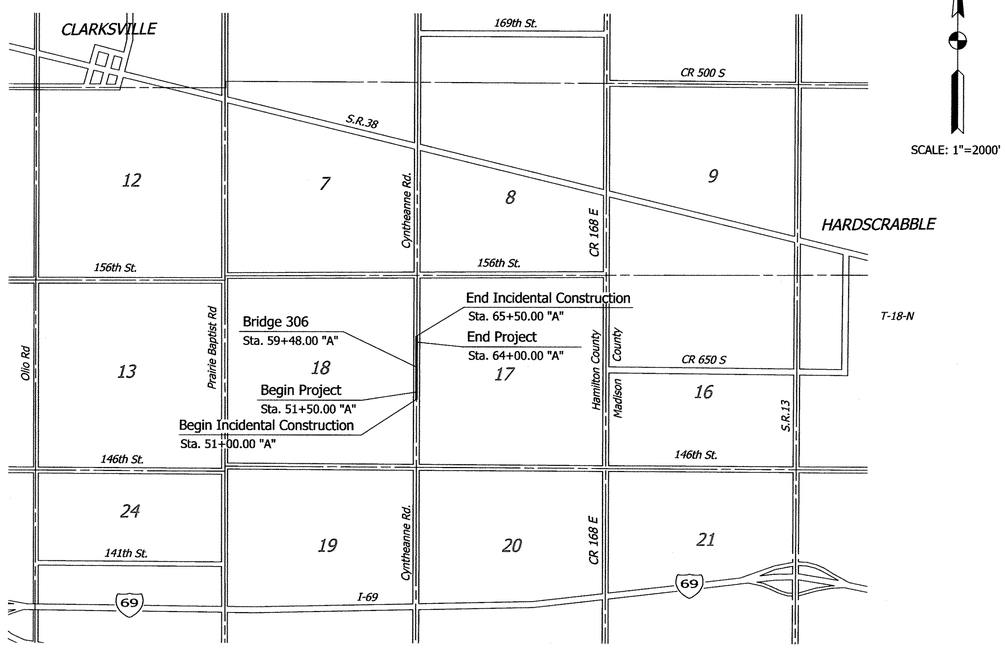
Christine Altman — President

Mark Heirbrandt — Vice President

Steven C. Dillinger — Member

Robin M. Mills — Auditor

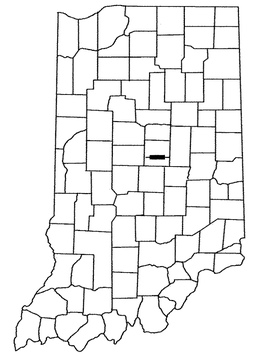
Joel Thurman, P.E. — Acting County Highway Engineer



LOCATION MAP

SCALE: 1"=2000'

TRAFFIC DATA	
A.D.T. (2011)	492 V.P.D.
DESIGN SPEED	55 M.P.H.
LOCAL FUNCTIONAL CLASSIFICATION	LOCAL ROAD
REGULATED DRAIN	YES - KEISER DRAIN



PROJECT LOCATION SHOWN BY

LATITUDE: 40°00'33"N LONGITUDE: 85°52'53"W

BRIDGE LENGTH:	0.008	MI.
ROADWAY LENGTH:	0.229	MI.
TOTAL LENGTH:	0.237	MI.
MAX. GRADE:	2.95	%

GENERAL NOTES

1) Notify the Hamilton County Surveyor's Office at 317-776-8495 a minimum of 30 days prior to construction per Indiana Code. The placement of a benchmark by the Contractor will be required as a part of this project. See Section Corner Monument and Benchmark Placement Special Provision for additional information.

INDIANA DEPARTMENT OF TRANSPORTATION
STANDARD SPECIFICATIONS DATED 2016
TO BE USED WITH THESE PLANS

Plans Prepared By:
LOCHMUELLER GROUP
3502 Woodview Trace, Suite 150
Indianapolis, Indiana 46268
Phone: 317.222.3880
Toll Free: 888.830.6977

SOIL CONSULTANTS
EARTH EXPLORATION, INC.
7770 West New York St
Indianapolis, Indiana, 46214
(317) 273-1690

BRIAN K. ARTERBERY REGISTERED No. 19800103 STATE OF INDIANA PROFESSIONAL ENGINEER

ADAM C. STEURY REGISTERED No. 11400165 STATE OF INDIANA PROFESSIONAL ENGINEER

CERTIFIED BY: _____ May 18, 2017
REGISTERED PROFESSIONAL ENGINEER — DATE
STATE OF INDIANA NO. 19800103

CERTIFIED BY: _____ May 18, 2017
REGISTERED PROFESSIONAL ENGINEER — DATE
STATE OF INDIANA NO. 11400165

BRIDGE FILE
HAMILTON CO. BR. 306
DESIGNATION
PB-14-0004

SURVEY BOOK	SHEETS
	1 of 39
CONTRACT	PROJECT
	PB-14-0004

Date: May 18, 2017, 11:09am User Name: jtotterman
File: M:_2014\214-0030\Road\CAD\MicroMG\Title.dwg

UTILITIES

ELECTRIC
Duke Energy
100 S. Mill Creek Road
Noblesville, IN 46062
Contact: Brynn Streeter
(317)-703-0681
Brynn.streeter@duke-energy.com

WATER
CEG Water
2150 Dr. Martin Luther King Jr. Street
Indianapolis, IN 46202
Contact: Chris Brumfield
(317)-695-0978
CBrumfield@citizensenergygroup.com

COMMUNICATIONS
AT&T
240 N Meridian Street
Indianapolis, IN 46204
Contact: Brian Cravens
(317)-796-5793
BC85@attn.com

Comcast
5330 East 65th Street
Indianapolis, IN 46220
Contact: Thomas Spencer
(317)-752-9426
tspencer@telecomplacement.com

Indiana 811
Know what's below.
Call before you dig.

INDEX

REVISIONS

SHEET NO.	DATE	REVISED

BRIAN K. ARTERBERY
REGISTERED
No. 19800103
STATE OF INDIANA
PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL B. K. Arterbery — DESIGN ENGINEER — 04/28/2017 DATE

DESIGNED: BSS DRAWN: DJG
CHECKED: BKA CHECKED: BSS

HAMILTON COUNTY
HIGHWAY DEPARTMENT

INDEX AND GENERAL NOTES

HORIZONTAL SCALE	BRIDGE FILE
N/A	HAMILTON CO. BR. 306
VERTICAL SCALE	DESIGNATION
N/A	PB-14-0004
SURVEY BOOK	SHEETS
	2 of 39
CONTRACT	PROJECT
	PB-14-0004

Date: May 25, 2017, 9:45am User Name: bstutzman
File: H:_2014\1214-0030\Road\CAD\Mscd\WG\Index.dwg

SURVEYOR'S REPORT

ROUTE SURVEY for Bridge 306 and Small Structure #23034, on Cyntheanne Road over Keiser Drain between 146th Street and 156th Street.
OWNER/CLIENT: Hamilton County, Indiana.
LOCATED in Sections 17 and 18, Township 18 North, Range 6 East, Wayne Township, Hamilton County, Indiana.

The purpose of this survey is to collect data for the design of a bridge/small structure project, and to provide a basis of describing any right-of-way needed for the project. It is not a property retracement survey.

Field measurements for this survey were made in accordance with specifications for Urban Surveys as outlined in the Indiana Administrative Code (865 IAC 1-12 "Rule 12"), with a "Relative Positional Accuracy" of plus or minus 0.07 feet plus 50 parts per million. The "Relative Positional Accuracy" relates to the accuracy limitations of the measurements made this survey (including the cumulative effects of measurement errors).

Coordinates and bearings used this survey are on the NAD83 Indiana East Zone State Plane Coordinate Grid, based on GPS observations using the Trimble VRS-Now network at Random Control Point #1400. This coordinate system was chosen for consistency with the Hamilton County Surveyor's published coordinates on section corners in the area.

All horizontal coordinate, distance, and stationing values shown are measured on the State Plane Grid. The grid-to-ground combined factor at the project location is 0.999957491, yielding a difference of about 0.22' per mile (43 parts-per-million) between ground-measured distances and coordinate inverses.

For many practical applications within the project area, the grid-ground factor can be ignored and the coordinates shown can be treated as local ground coordinates. However, for any applications requiring higher accuracies, any distance values shown, or generated from coordinates or stationing shown on this survey, should be scaled to ground by dividing by the Project Average Combined Factor of 0.999957491, before applying to measurements laid out on the ground. Likewise, any ground-measured distances should be scaled to grid by multiplying by 0.999957491 before using to generate coordinates or stationing in this project.

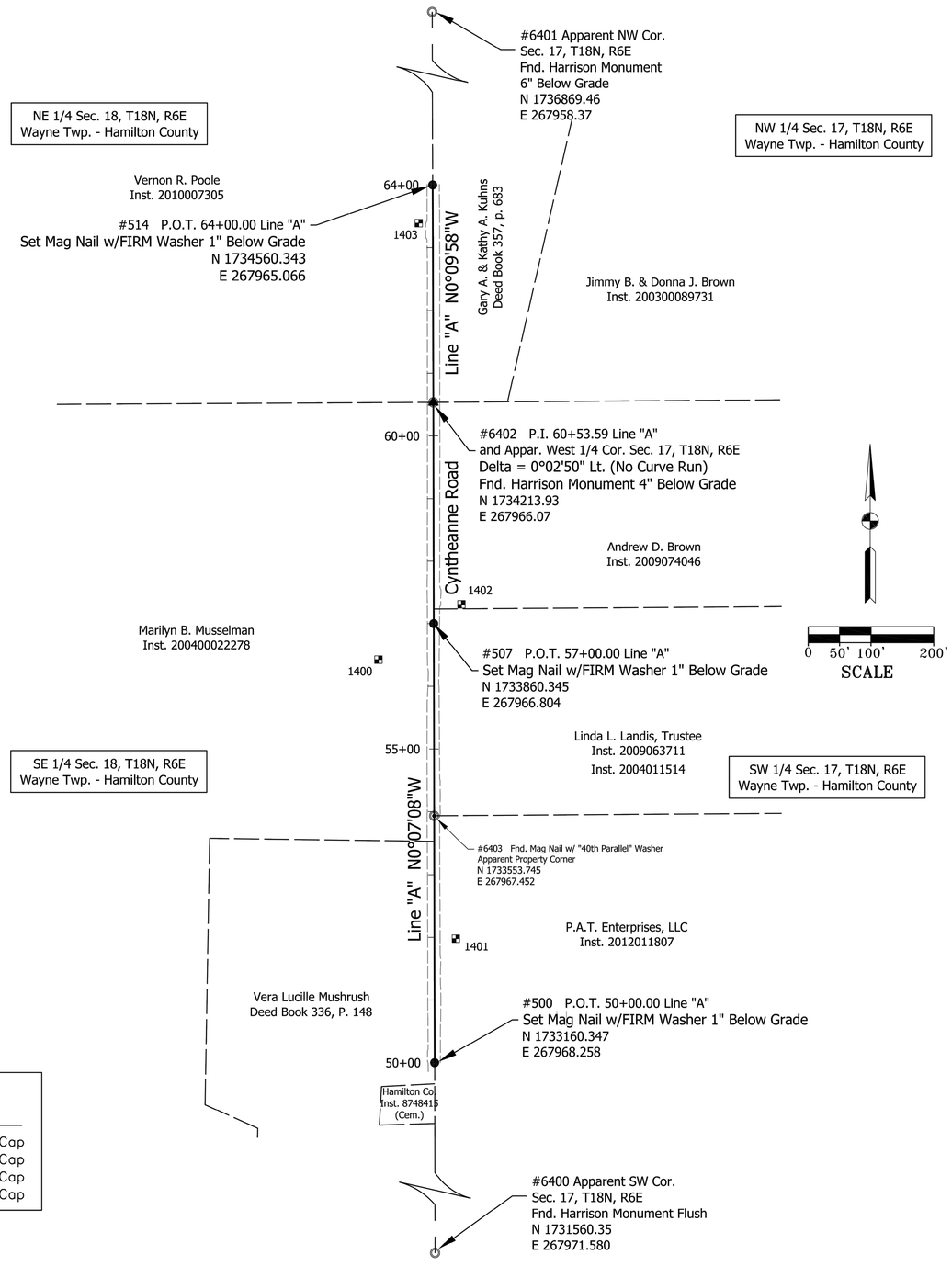
Line "A" is an original alignment, defined by the monuments set or found this survey, and therefore has no re-establishment uncertainty. Line "A" was established to follow the apparent section line as evidenced by the monuments shown.

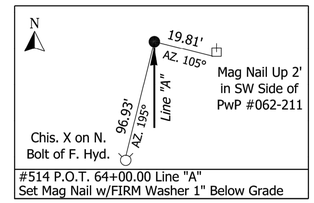
Section Corners:

Points 6400, 6401, and 6402 all represent Harrison Monuments found in place, consistent with Hamilton County Surveyor Corner Records. Their positions as measured this survey agreed with the County Surveyor's published coordinates, well within the relative positional accuracy of this survey; the published coordinates were therefore held as published.

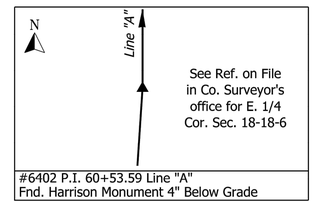
Existing Right-of-way:

No reference was found in adjoining deeds regarding the existing right-of-way of Cyntheanne Road. The Hamilton County Highway Department was contacted but was not able to provide documentary records of the existing right-of-way.

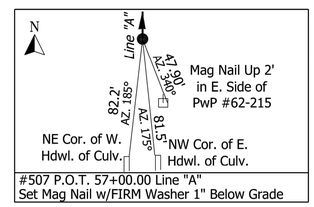




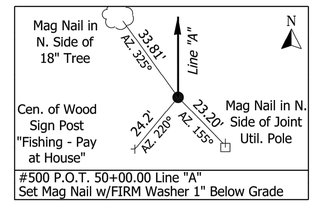
#514 P.O.T. 64+00.00 Line "A"
Set Mag Nail w/FIRM Washer 1" Below Grade



#6402 P.I. 60+53.59 Line "A"
Fnd. Harrison Monument 4" Below Grade



#507 P.O.T. 57+00.00 Line "A"
Set Mag Nail w/FIRM Washer 1" Below Grade



#500 P.O.T. 50+00.00 Line "A"
Set Mag Nail w/FIRM Washer 1" Below Grade

COORDINATE LISTING: RANDOM CONTROL POINTS

Pt. #	Northing	Easting	Description
1400	1733803.046	267878.573	Set 3/4" Rebar w/ "POINT REFERENCE" Cap
1401	1733358.208	268002.028	Set 3/4" Rebar w/ "POINT REFERENCE" Cap
1402	1733891.343	268010.920	Set 3/4" Rebar w/ "POINT REFERENCE" Cap
1403	1734499.467	267942.863	Set 3/4" Rebar w/ "POINT REFERENCE" Cap

LEGEND

- ▲ ● MONUMENTED BASELINE CONTROL POINTS
- ○ PROPERTY / SECTION CORNER EVIDENCE
- ▪ 1403 RANDOM CONTROL POINT

SOCIAL SECURITY NUMBER REDACTION STATEMENT

I affirm, under the penalties for perjury, that I have taken reasonable care to redact each social security number in this document, unless required by law.

Perry E. Jones

Prepared By

LOCHMUELLER GROUP

LOCHMUELLER GROUP, INC.
f/k/a Bernardin Lochmueller & Associates, Inc.
6200 Vogel Road Evansville, Indiana 47715
812.479.6200 / fax: 812.479.6262

SURVEY STARTED
June 2, 2015
SURVEY COMPLETED
June 4, 2015
ROUTE PLAT SHEETS
1 of 1
SURVEYOR'S PROJECT NO.
214-0030-1BL

FIELD SURVEYOR STATEMENT

THIS SURVEY, TO THE BEST OF MY KNOWLEDGE AND BELIEF, IS EXECUTED ACCORDING TO THE PROVISIONS OF 865 I.A.C. 1-12-20 REGARDING ROUTE SURVEYS, EXCEPT THAT ANY DATA SHOWN REGARDING THE LOCATION OR DESCRIPTION OF ANY NEW PARCELS TO BE ACQUIRED OR THE EXISTING PARCELS IS NOT A PART OF THIS SURVEY

RECOMMENDED FOR APPROVAL

Perry E. Jones 2/14/2014
REGISTERED LAND SURVEYOR, FIELD DATE

PERRY E. JONES REGISTERED NO. 9600016 STATE OF INDIANA LAND SURVEYOR

Prepared for the
COMMISSIONERS OF HAMILTON COUNTY, INDIANA

LOCATION CONTROL ROUTE SURVEY
Bridge #306 and Small Structure #23034 on Cyntheanne Road over Keiser Drain between 146th Street and 156th Street

HORIZONTAL SCALE	BRIDGE FILE
1" = 100'	HAMILTON CO. BR. 306
COUNTY	DESIGNATION
HAMILTON	PB-14-0004
SURVEY BOOK	PLAN SHEETS
	3 of 39
CONTRACT	PROJECT
----	PB-14-0004

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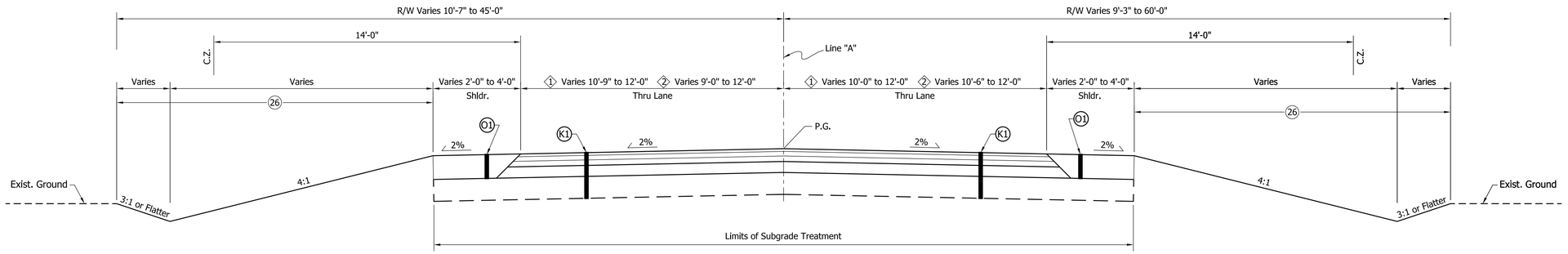
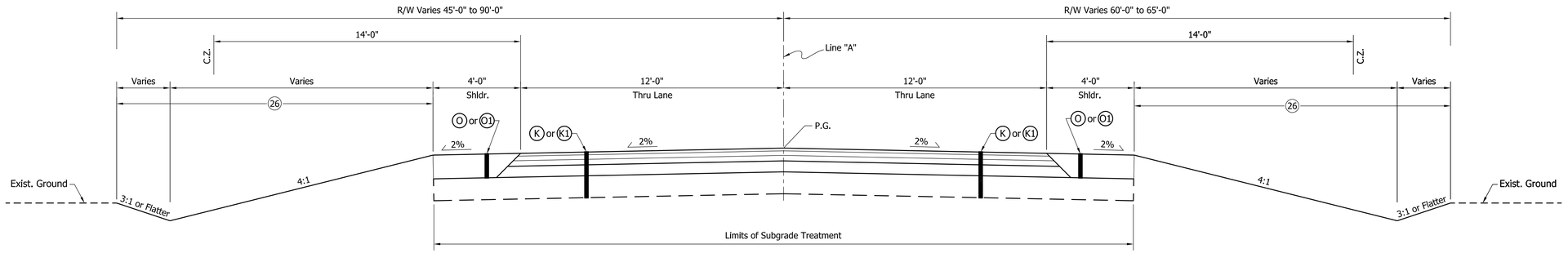


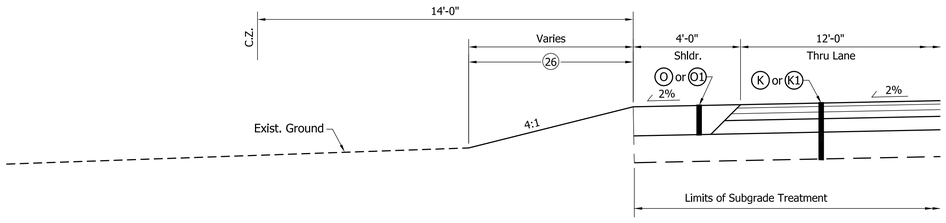
Typical Incidental Section Line "A"

1 Sta. 51+00.00 to Sta. 51+50.00
2 Sta. 64+00.00 to Sta. 65+50.00



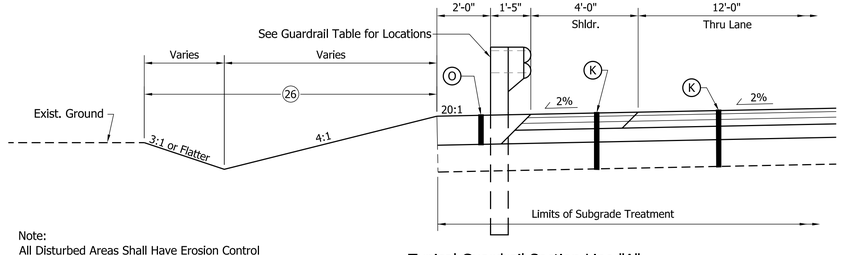
Typical Cross Section Line "A"

Sta. 51+50.00 to Sta. 56+10.00
Sta. 59+90.56 to Sta. 64+00.00



Auxiliary Section Line "A"

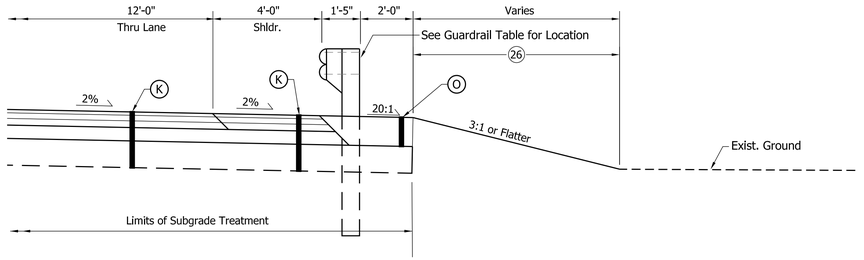
Sta. 51+00.00 to Sta. 56+10.00 Lt.



Typical Guardrail Section Line "A"

Sta. 59+90.56 to Sta. 60+07.79 Lt.

Note:
All Disturbed Areas Shall Have Erosion Control Blanket and See Mixture, R; Unless Otherwise Shown.



Typical Guardrail Section Line "A"

Sta. 59+90.56 to Sta. 62+41.46 Rt.
V-Ditch from Sta.59+90.56 to Sta. 60+00.00

LEGEND

(K) 165#/SYD. QC/QA HMA, 2, 64 Surface, 9.5mm on 275#/SYD. QC/QA HMA, 2, 64, Intermediate, 19.0mm on 330#/SYD. QC/QA HMA, 2, 64, Base, 25.0mm on 6 in. Compacted Aggregate No. 53, Base on Subgrade Treatment, Type I

(K1) 165#/SYD. QC/QA HMA, 2, 64 Surface, 9.5mm on 275#/SYD. QC/QA HMA, 2, 64, Intermediate, 19.0mm on 330#/SYD. QC/QA HMA, 2, 64, Base, 25.0mm on 6 in. Compacted Aggregate No. 53, Base on Subgrade Treatment, Type IC

(O) 13 in. Compacted Aggregate, No. 53, on Subgrade Treatment, Type I

(O1) 13 in. Compacted Aggregate, No. 53, on Subgrade Treatment, Type IC

(26) Erosion Control Blanket & Seed Mixture, R

C.Z. Clear Zone

BRIAN K. ARTERBERY REGISTERED No. 19800103 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER 04/28/2017 DATE

DESIGNED: BSS DRAWN: DJG

CHECKED: BKA CHECKED: BSS

HAMILTON COUNTY HIGHWAY DEPARTMENT

TYPICAL CROSS SECTIONS

HORIZONTAL SCALE	BRIDGE FILE
3/8"=1'-0"	HAMILTON CO. BR. 306
VERTICAL SCALE	DESIGNATION
N/A	PB-14-0004
SURVEY BOOK	SHEETS
	4 of 39
CONTRACT	PROJECT
	PB-14-0004

Date: Jun 06, 2017, 4:35pm User Name: barterbery
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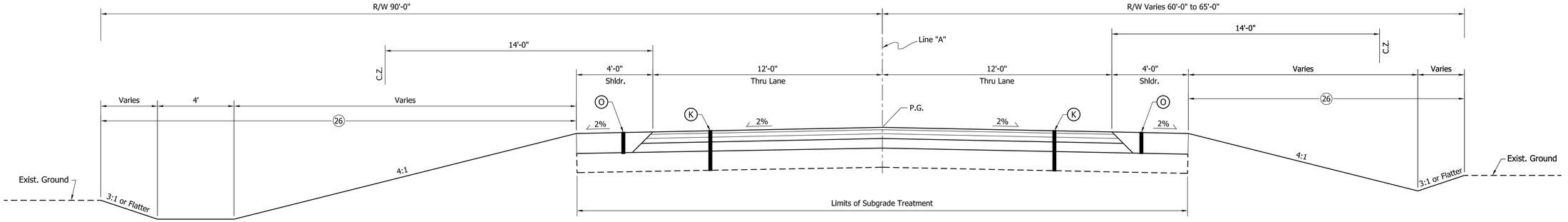
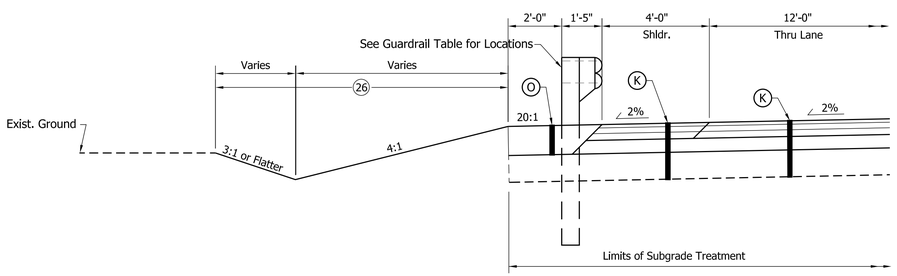


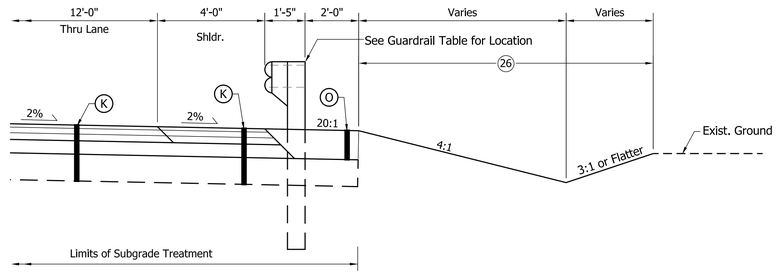
Typical Cross Section Line "A"

Sta. 56+10.00 to Sta. 59+05.44



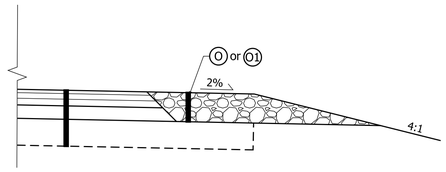
Typical Guardrail Section Line "A"

Sta. 58+48.29 to Sta. 59+05.44 Lt.



Typical Guardrail Section Line "A"

Sta. 57+88.21 to Sta. 59+05.44 Rt.



Every 100 Feet, Extend Aggregate to Slope for a Width of 1 Foot.

Note:
All Disturbed Areas Shall Have Erosion Control Blanket and See Mixture, R; Unless Otherwise Shown.

EARTHWORK SUMMARY TABLE		
COMMON EXCAVATION		
Line "A"	7,180	CYD
Undercut for STR NO. 12	35	CYD
Undercut for Poor Soils	520	CYD
Common Excavation for Bridge	271	CYD
TOTAL COMMON EXCAVATION	**8,010**	**CYD**
Less Unuseable Excavation	1,630	CYD
TOTAL USEABLE EXCAVATION	**6,380**	**CYD**
FILL		
Line "A"	18,205	CYD
Subtotal, Available Fill	18,205	CYD
Swell (15%)	2,735	CYD
TOTAL FILL VOLUME REQ'D	**20,940**	**CYD**
Less Useable Excavation	6,380	CYD
TOTAL BORROW REQ'D	**14,560**	**CYD**
EXCAVATION, FOUNDATION, UNCLASSIFIED	**265**	**CYD**
BENCHING*	**255**	**CYD**

*Benching is Not Paid for Directly

LEGEND

(K) 165#/SYD. QC/QA HMA, 2, 64 Surface, 9.5mm on 275#/SYD. QC/QA HMA, 2, 64, Intermediate, 19.0mm on 330#/SYD. QC/QA HMA, 2, 64, Base, 25.0mm on 6 in. Compacted Aggregate No. 53, Base on Subgrade Treatment, Type I

(K1) 165#/SYD. QC/QA HMA, 2, 64 Surface, 9.5mm on 275#/SYD. QC/QA HMA, 2, 64, Intermediate, 19.0mm on 330#/SYD. QC/QA HMA, 2, 64, Base, 25.0mm on 6 in. Compacted Aggregate No. 53, Base on Subgrade Treatment, Type IC

(O) 13 in. Compacted Aggregate, No. 53, on Subgrade Treatment, Type I

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(26) Erosion Control Blanket & Seed Mixture, R

C.Z. Clear Zone

BRYAN K. ARTERBERY REGISTERED No. 19800103 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER 04/28/2017 DATE

DESIGNED: BSS DRAWN: DJG

CHECKED: BKA CHECKED: BSS

HAMILTON COUNTY HIGHWAY DEPARTMENT

TYPICAL CROSS SECTIONS

HORIZONTAL SCALE	BRIDGE FILE
3/8"=1'-0"	HAMILTON CO. BR. 306
VERTICAL SCALE	DESIGNATION
N/A	PB-14-0004
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Date: Jun 06, 2017, 4:38pm User Name: barterbery
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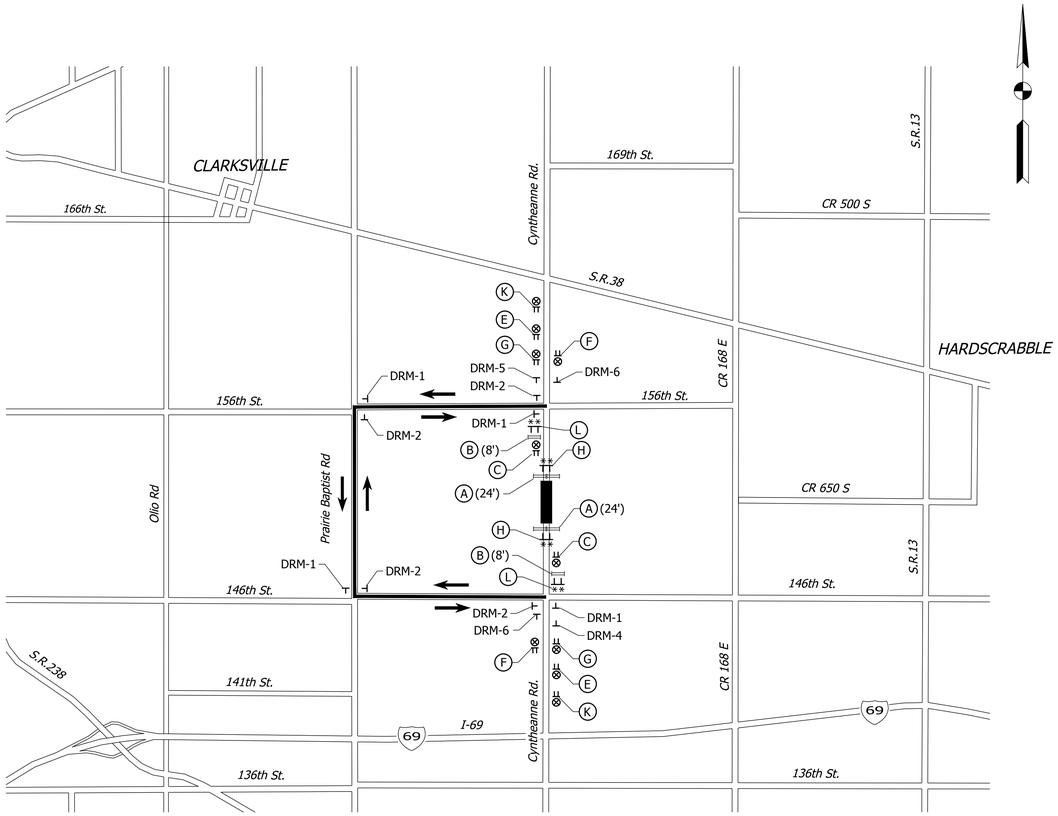


Legend

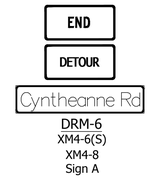
- (A) Std. Barricade, Type III-A (Feet Req'd.)
- (B) Std. Barricade, Type III-B (Feet Req'd.)
- (C) Construction Sign A, XG20-3 (Road Closed Ahead) w/ W20-7 (500 Feet)
- (E) Construction Sign A, XG20-3 (Road Closed Ahead)
- (F) Construction Sign B, XG20-2 (End Construction)
- (G) Construction Sign A, XW20-2 (Detour Ahead)
- (H) Construction Sign A, R11-2 (Road Closed)
- (K) Construction Sign, C, XW2-6-A (Worksite Penalty)
- (L) Road Closure Sign Assembly; R11-3 (Road Closed X.X Miles Ahead Local Traffic Only) w/ M4-10 (L or R) (Detour Arrow)
- ⊤ Detour Route Marker
- ⊤⊤ Construction Sign
- ⊗ Construction Warning Light, A
- ** Construction Warning Light, B
- Std. Barricade
- Work Area
- Detour Route

DRM-1
XM4-8
Sign A
M6-1(S)

DRM-2
XM4-8
Sign A
M6-1(S)

DRM-4
XM4-8
Sign A
M5-1(L)(S)

DRM-5
XM4-8
Sign A
M5-1(R)(S)



DRM-6
XM4-6(S)
XM4-8
Sign A

Detour

1. Cyntheanne Road Shall Be Closed To Thru Traffic From 146th Street To 156th Street. Detour Cyntheanne Road Traffic West On 146th Street To Prairie Baptist Rd., North On Prairie Baptist Rd. To 156th Street, & East On 156th To Cyntheanne Road.
2. Detour Shall Remain In Place Throughout Construction.
3. Contractor Shall Maintain Temporary Access To All Properties During Construction.

MAINTENANCE OF TRAFFIC QUANTITIES

Construction Sign, A	Construction Sign, B	Construction Sign, C	Road Closure Sign Assembly	Detour Route Marker Assembly	Barricade, III-A	Barricade, III-B
Each	Each	Each	Each	Each	LFT	LFT
8	2	2	2	12	48	16

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER 04/28/2017 DATE

DESIGNED: BSS DRAWN: DJG

CHECKED: BKA CHECKED: BSS

HAMILTON COUNTY
HIGHWAY DEPARTMENT

MAINTENANCE OF TRAFFIC

HORIZONTAL SCALE	BRIDGE FILE
1"=2000'	HAMILTON CO. BR. 306
VERTICAL SCALE	DESIGNATION
N/A	PB-14-0004
SURVEY BOOK	SHEETS
	6 of 39
CONTRACT	PROJECT
	PB-14-0004

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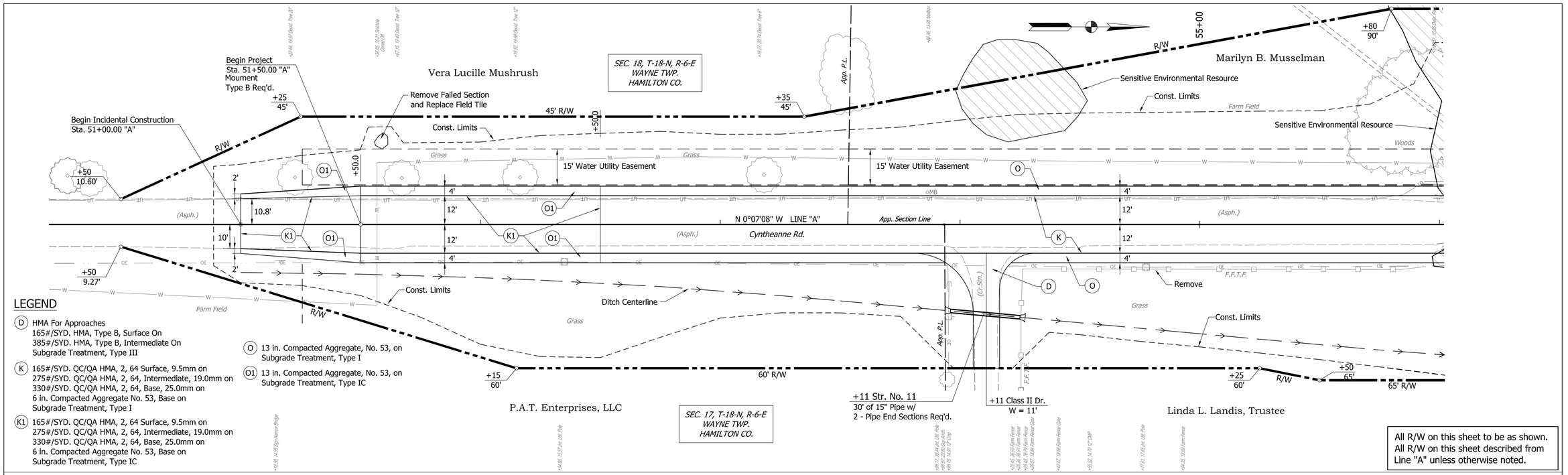

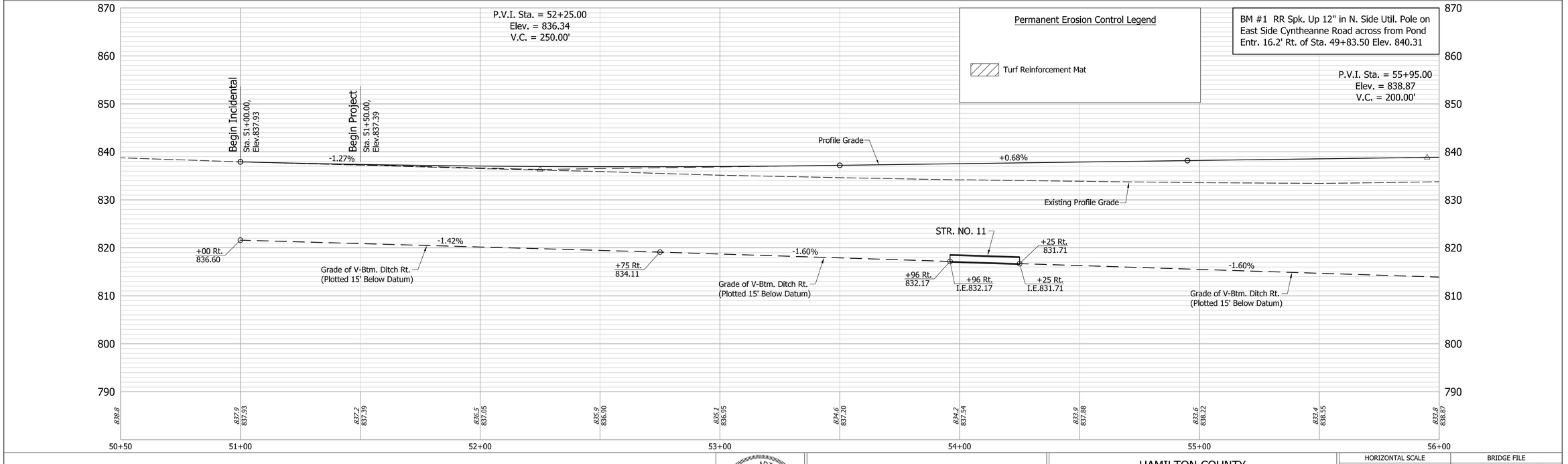

Note:
All Disturbed Areas Shall Have Erosion Control Blanket and See Mixture, R; Unless Otherwise Shown.

BRIAN K. ARTERBERY
REGISTERED
No. 19800103
STATE OF INDIANA
PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER 04/28/2017 DATE

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CHECKED: BKA CHECKED: BSS

HAMILTON COUNTY
HIGHWAY DEPARTMENT

PLAN & PROFILE LINE "A"
STA. 51+00.00 TO STA. 56+00.00

HORIZONTAL SCALE	BRIDGE FILE
1"=20'	HAMILTON CO. BR. 306
VERTICAL SCALE	DESIGNATION
1"=10'	PB-14-0004
SURVEY BOOK	SHEETS
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CONTRACT	PROJECT
	PB-14-0004

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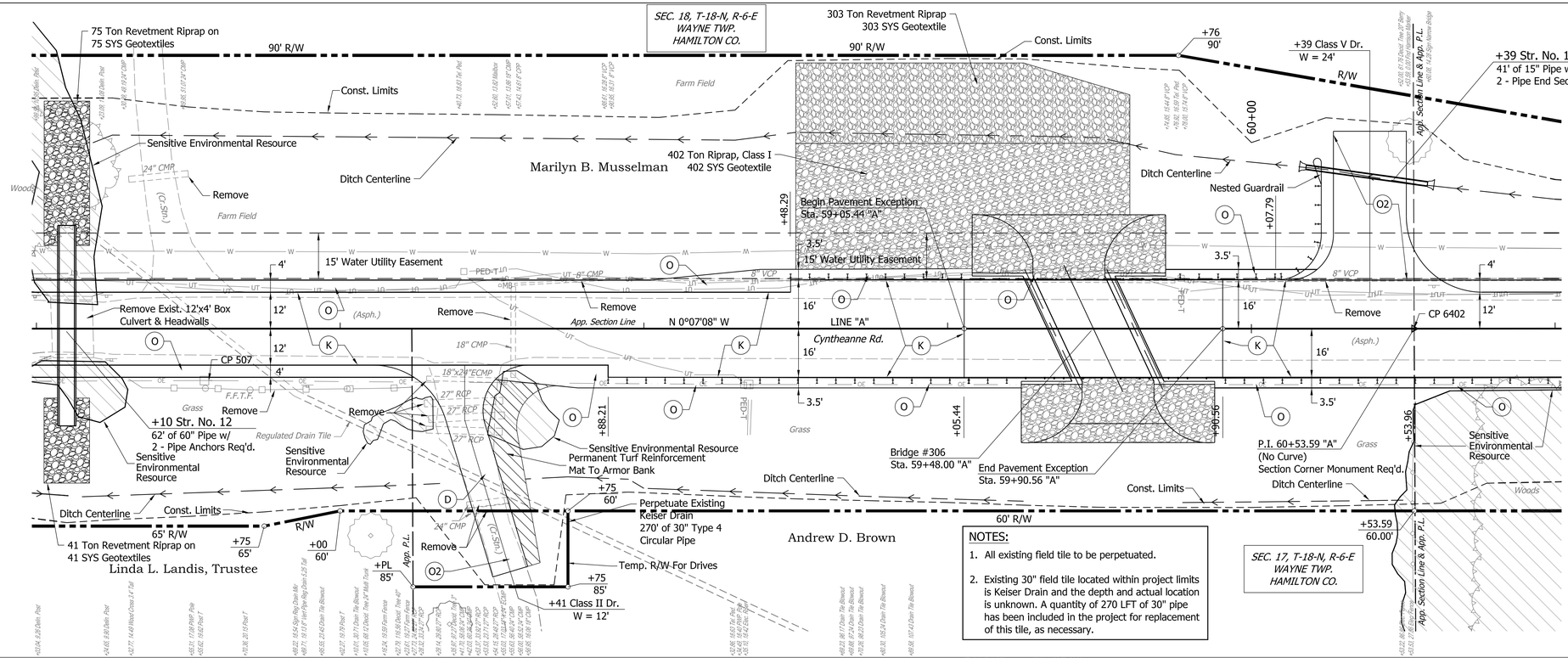


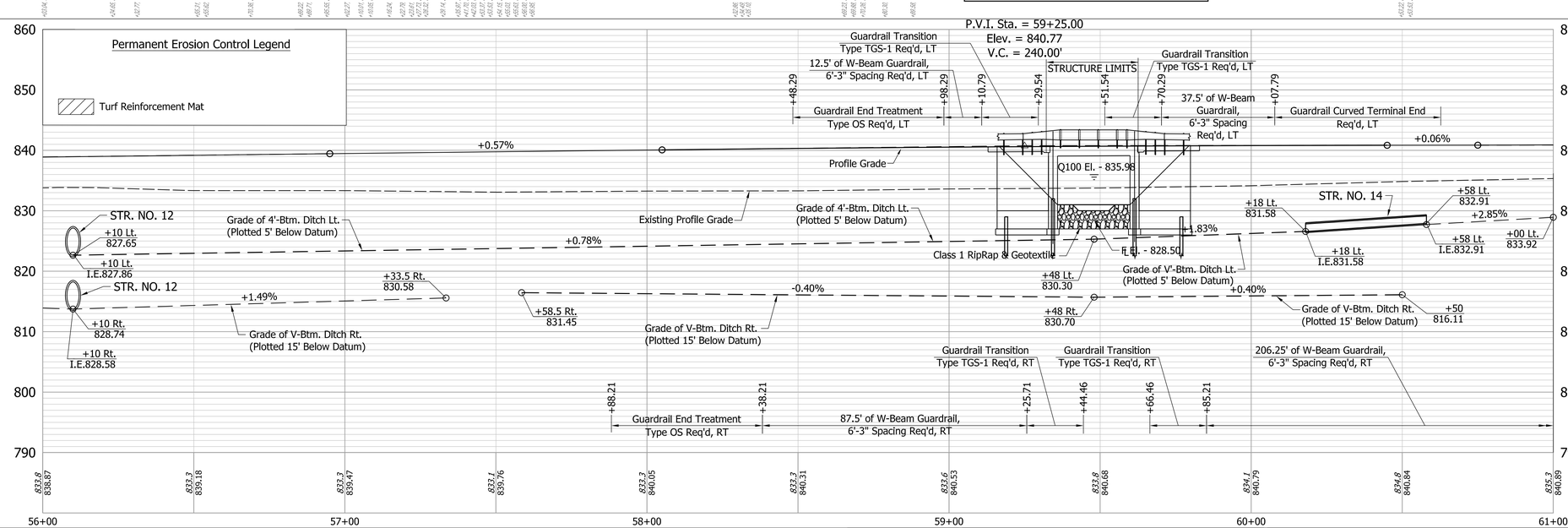
LEGEND

- (D) HMA For Approaches
  165#/SYD. HMA, Type B, Surface On
  385#/SYD. HMA, Type B, Intermediate On
  Subgrade Treatment, Type III
- (K) 165#/SYD. QC/QA HMA, 2, 64 Surface, 9.5mm on
  275#/SYD. QC/QA HMA, 2, 64, Intermediate, 19.0mm on
  330#/SYD. QC/QA HMA, 2, 64, Base, 25.0mm on
  6 in. Compacted Aggregate No. 53, Base on
  Subgrade Treatment, Type I
- (K1) 165#/SYD. QC/QA HMA, 2, 64 Surface, 9.5mm on
  275#/SYD. QC/QA HMA, 2, 64, Intermediate, 19.0mm on
  330#/SYD. QC/QA HMA, 2, 64, Base, 25.0mm on
  6 in. Compacted Aggregate No. 53, Base on
  Subgrade Treatment, Type IC
- (O) 13 in. Compacted Aggregate, No. 53, on
  Subgrade Treatment, Type I
- (O1) 13 in. Compacted Aggregate, No. 53, on
  Subgrade Treatment, Type IC
- (O2) Compacted Aggregate, No. 53

NOTES:

1. All existing field tile to be perpetuated.
2. Existing 30" field tile located within project limits is Keiser Drain and the depth and actual location is unknown. A quantity of 270 LFT of 30" pipe has been included in the project for replacement of this tile, as necessary.

All R/W on this sheet to be as shown.
All R/W on this sheet described from Line "A" unless otherwise noted.



BM #2 Chis. Square on Top of South End of East-Most Conc. Drive Culvert for Address 15044 Cyntheanne Road 32.8' Rt. of Sta. 57+29.00 Elev. 833.08

HYDRAULIC INFORMATION

DRAINAGE AREA	=2.33 mi^2
PROPOSED AREA REQUIRED	=62.0 $ft.^2$
PROPOSED AREA PROVIDED	=106.9 $ft.^2$
Q100 DISCHARGE	=487 $ft.^3$/sec.
Q100 ELEVATION	=835.98 ft.
PROPOSED VELOCITY	=6.2 ft./sec.
PROPOSED BACKWATER DEPTH (Q100)	=1.80 ft.
LOW STRUCTURE ELEV.	=838.71 ft.
Q100 SCOUR ELEV.	=823.46 ft.
Q500 SCOUR ELEV.	=820.78 ft.

Note:
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HIGHWAY DEPARTMENT

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HORIZONTAL SCALE	BRIDGE FILE
1"=20'	HAMILTON CO. BR. 306
VERTICAL SCALE	DESIGNATION
1"=10'	PB-14-0004
SURVEY BOOK	SHEETS
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CONTRACT	PROJECT
----	PB-14-0004

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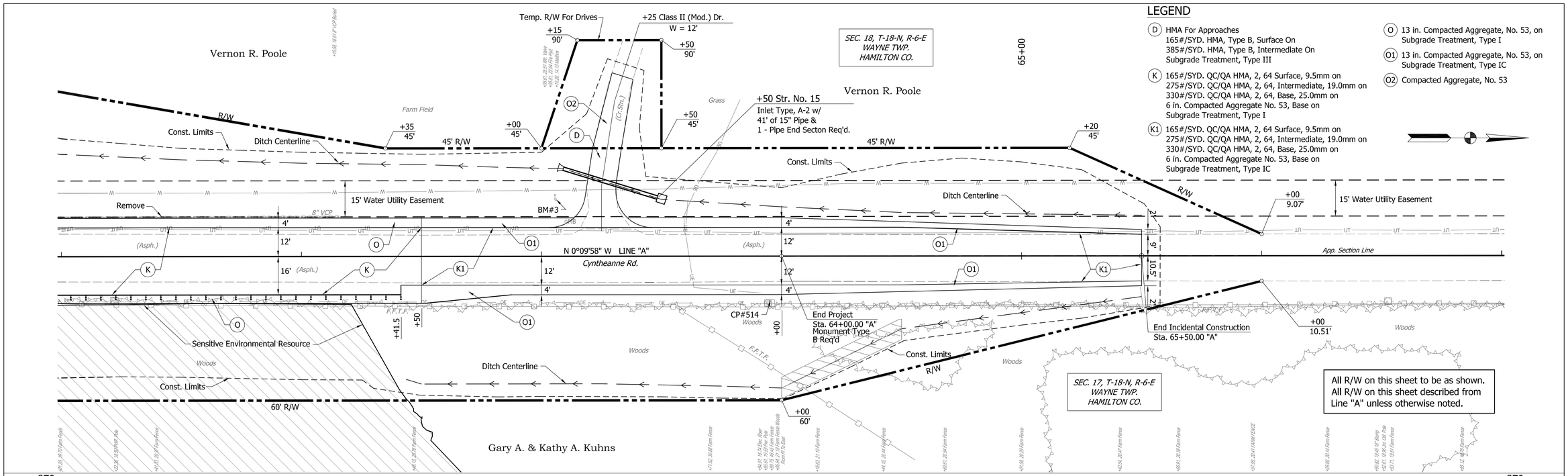

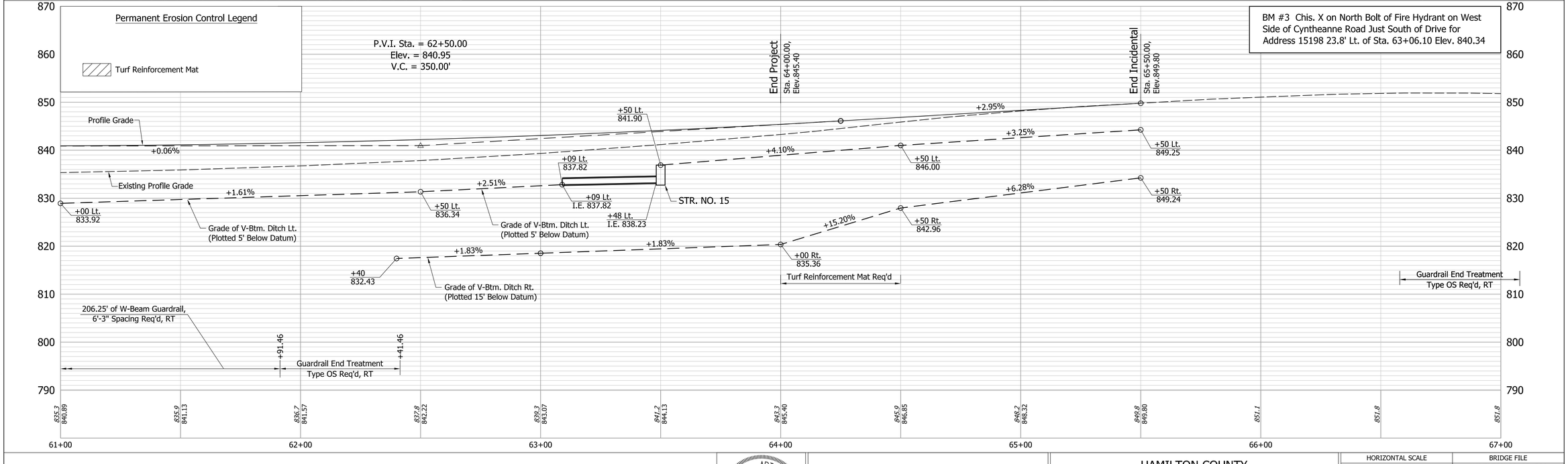

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HAMILTON COUNTY
HIGHWAY DEPARTMENT

PLAN & PROFILE LINE "A"
STA. 61+00.00 TO STA. 67+00.00

HORIZONTAL SCALE	BRIDGE FILE
1"=20'	HAMILTON CO. BR. 306
VERTICAL SCALE	DESIGNATION
1"=10'	PB-14-0004
SURVEY BOOK	SHEETS
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CONTRACT	PROJECT
----	PB-14-0004

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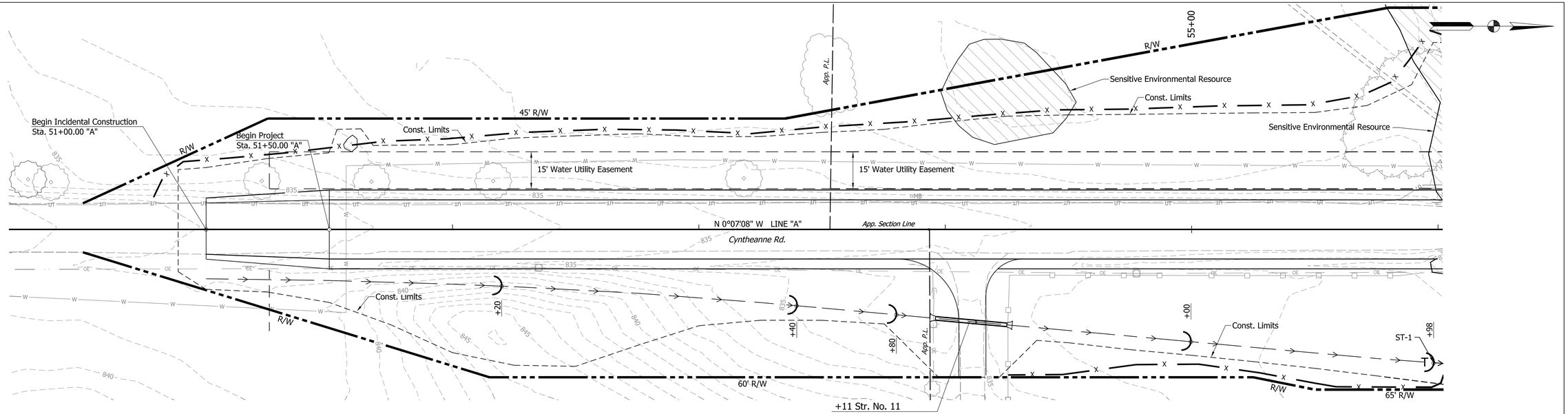

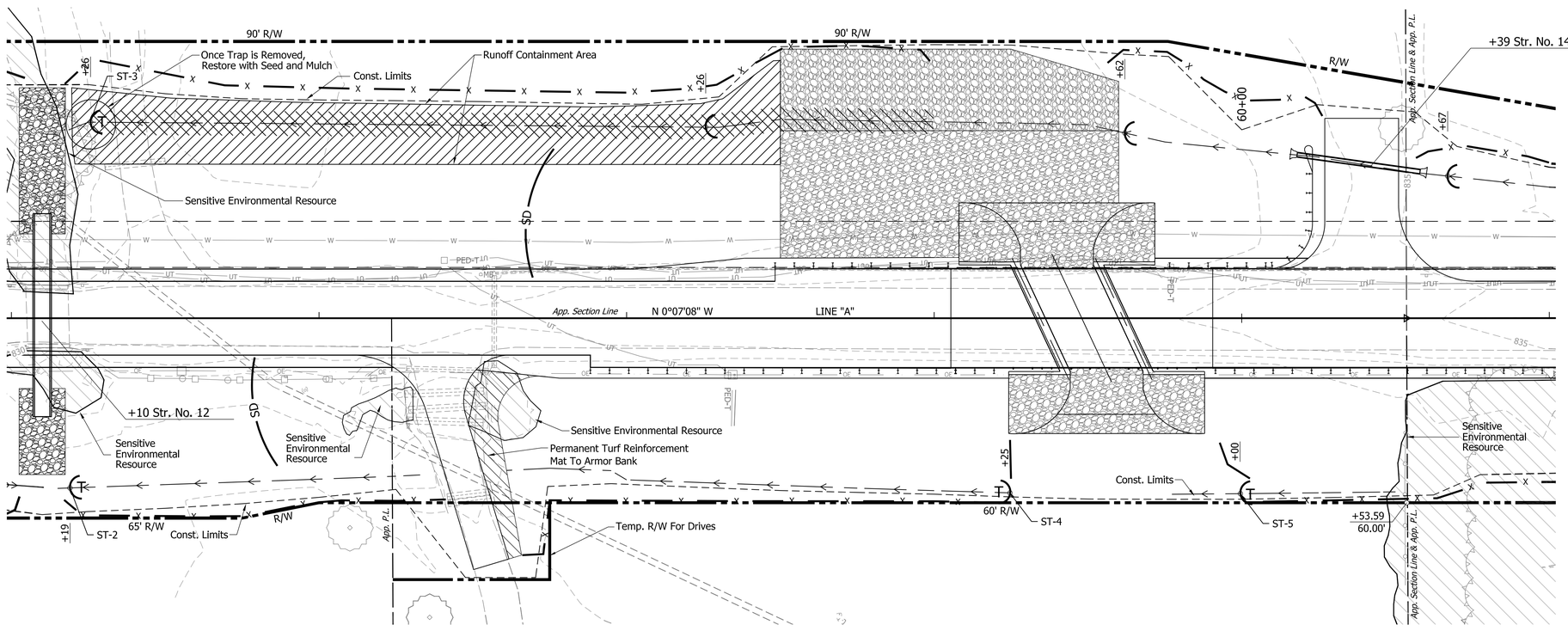

LEGEND

- Silt Fence
- Check Drain
- Trap

Sediment Trap Summary Table

	ST-1	ST-2	ST-3	ST-4	ST-5
Station	**55+98(Rt)**	**56+19(Rt)**	**56+26(Lt)**	**59+25(Rt)**	**60+00(Rt)**
Drainage Area (Ac)	0.51	0.18	1.16	0.21	0.63
Req'd Capacity (cft)	918	324	2088	378	1134
Design Capacity (cft)	930	330	2100	390	2440
PL - Graded Pool Length (ft)	155	55	175	65	305
PW - Graded Pool Width (ft)	3	3	4	3	4
S - Spillway Height (ft)	2.0	2.0	3.0	2.0	2.0
WW - Weir Width (ft)	4.0	4.0	4.0	4.0	4.0
WD - Weir Depth (ft)	1.0	1.0	1.0	1.0	1.0

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HAMILTON COUNTY
HIGHWAY DEPARTMENT

TEMPORARY EROSION CONTROL
STA. 51+00.00 TO STA. 61+00.00

HORIZONTAL SCALE	BRIDGE FILE
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VERTICAL SCALE	DESIGNATION
N/A	PB-14-0004
SURVEY BOOK	SHEETS
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CONTRACT	PROJECT
	PB-14-0004

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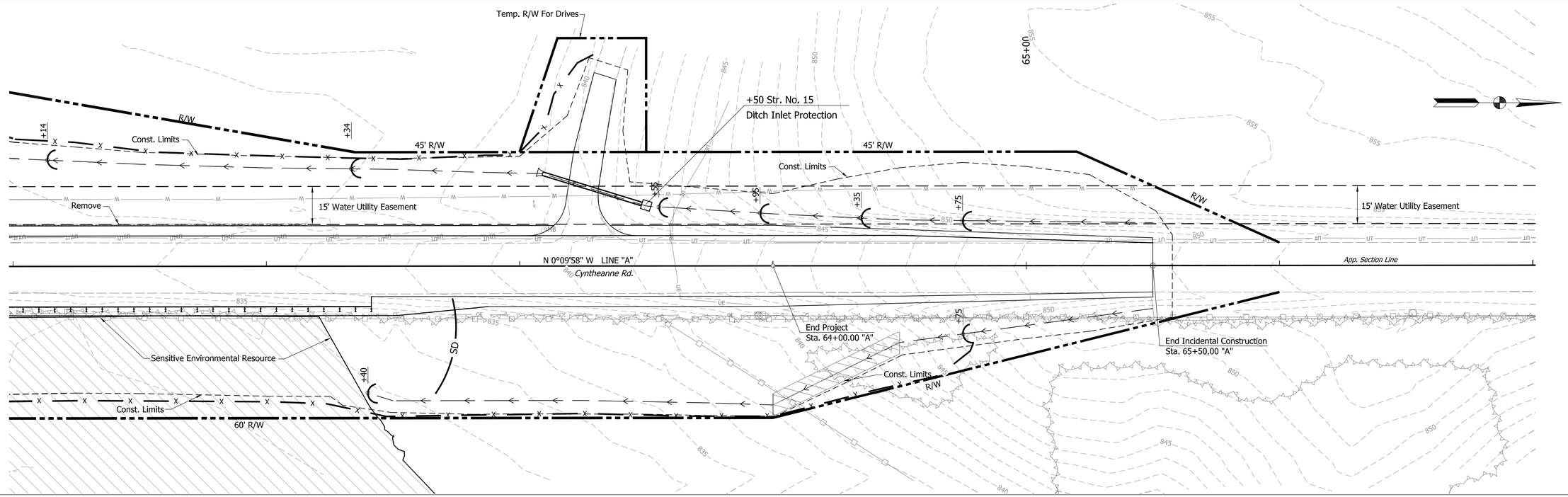

TEMPORARY EROSION CONTROL TABLE

LOCATION				PERIMETER PROTECTION	TEMPORARY SEDIMENT TRAP	SEDIMENT BASIN	SLOPE DRAIN	TEMPORARY CHECK DAM, REVETMENT RIPRAP	STRAW BALES DITCH CHECK	RIPRAP DITCH CHECK	DITCH INLET PROTECTION	FISH POOL	REMARKS
STATION	LEFT	MEDIAN	RIGHT	LFT	TON	EACH	LFT	TON	LFT	CYS	EACH	EACH	
52+20.00			X					14					
53+40.00			X					14					
53+80.00			X					14					
55+00.00			X					14					
62+40.00			X					14					
58+26.00	X							32					
59+62.00	X							14					
60+67.00	X							14					
61+14.00	X							14					
62+34.00	X							14					
63+55.00	X							14					
63+95.00	X							14					
64+35.00	X							14					
TOTAL								200					

TEMPORARY EROSION CONTROL TABLE

LOCATION				PERIMETER PROTECTION	TEMPORARY SEDIMENT TRAP	SEDIMENT BASIN	SLOPE DRAIN	TEMPORARY CHECK DAM, REVETMENT RIPRAP	STRAW BALES DITCH CHECK	RIPRAP DITCH CHECK	DITCH INLET PROTECTION	FISH POOL	REMARKS
STATION	LEFT	MEDIAN	RIGHT	LFT	TON	EACH	LFT	TON	LFT	CYS	EACH	EACH	
64+75.00	X							14					
64+75.00			X					14					
55+98.00			X		14								
56+19.00			X		14								
56+26.00	X				32								
59+25.00			X		14								
60+00.00			X		14								
50+79 to 63+29	X			1210									
54+25 to 64+75			X	991									
63+50.00	X										1		
TOTAL				2201	88			28			1		

Note:
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BRIAN K. ARTERBERY REGISTERED No. 19800103 STATE OF INDIANA PROFESSIONAL ENGINEER

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HAMILTON COUNTY
HIGHWAY DEPARTMENT

TEMPORARY EROSION CONTROL
STA. 61+00.00 TO STA. 67+00.00

HORIZONTAL SCALE	BRIDGE FILE
1"=20'	HAMILTON CO. BR. 306
VERTICAL SCALE	DESIGNATION
N/A	PB-14-0004
SURVEY BOOK	SHEETS
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CONTRACT	PROJECT
	PB-14-0004

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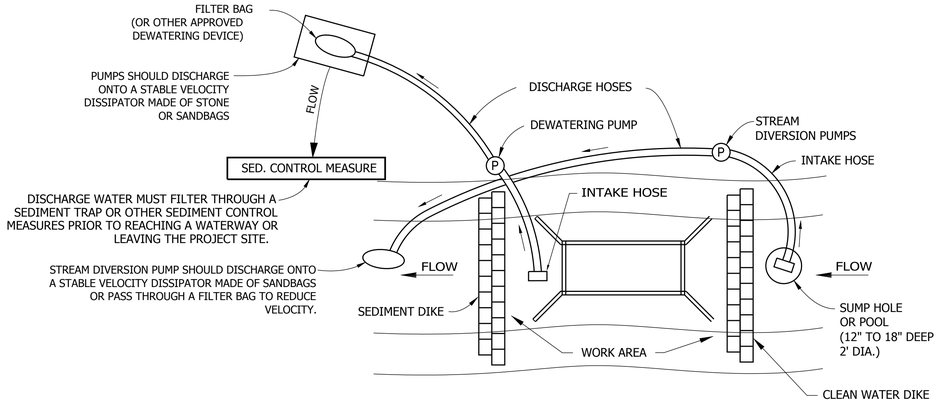
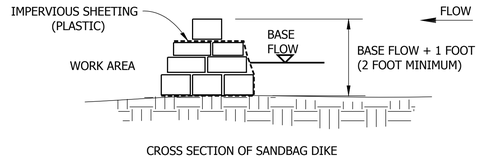




CROSS SECTION OF SANDBAG DIKE

PUMP-AROUND PRACTICE (P)
FOR CULVERT CONSTRUCTION

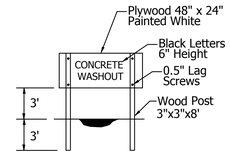
NOT TO SCALE

PUMP-AROUND

1.) Dewatering of the project area shall be performed using a mechanical pump. A dewatering (filter) bag shall be securely connected to the end of the discharge hose. The suction hose shall be floated as long as possible to prevent the pump from pulling sediment from the bottom of the pooled area.
2.) The dewatering bag may be of the single-use or reusable variety and shall be constructed of non-woven, polypropylene geotextile material. Each type and size of dewatering bag can handle varying rates of flow. The bag shall have for following minimum specifications:

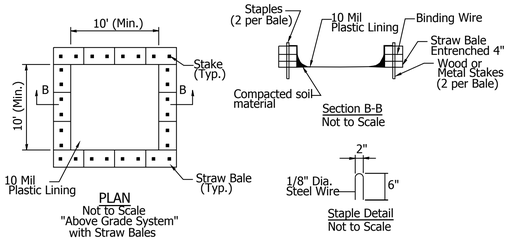
Permittivity	Grab Tensile	Weight	Apparent Opening Size
1.4 sec	205 lbs	8 oz/syd	80 US Sieve

3.) The dewatering bag shall be placed on a flat surface. Placing the dewatering bag on top of an aggregate base or straw bales will help to increase to flow through the fabric by providing a larger surface area of discharge.
4.) Water shall not be pumped from the project area at a rate faster than the manufacturer's maximum recommended flow rate of the dewatering bag.
5.) Dewatering bags shall be placed in a location in which runoff will pass through additional sediment control measures prior to entering the storm sewer.
6.) Following completion of dewatering, the sediment accumulated within the dewatering bag shall be removed from the bag and placed in an uplan area.

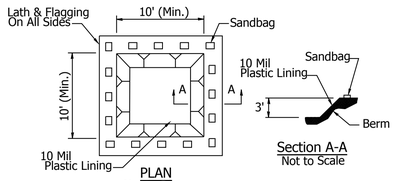


CONCRETE WASHOUT SIGN DETAIL

Not to Scale



CONCRETE WASHOUT - ABOVE GRADE SYSTEM



CONCRETE WASHOUT - BELOW GRADE SYSTEM

Location:

* Locate concrete washout systems at least 50 feet from any creek, wetlands, ditches, karst features, or storm drains/man made conveyance systems.
* To the extent practical, locate concrete washout systems in relatively flat areas that have established vegetative cover and do not receive runoff from adjacent land areas.
* Locate in areas that provide easy access for the concrete trucks and other construction equipment.
* Locate away from other construction traffic to reduce the potential for damage to system.

Materials:

* Minimum of ten millimeter polyethylene sheeting that is free of holes, tears, and other defects. The sheeting selected should be of appropriate size to fit the washout system without seams or overlap of the lining.
* Signage
* Orange safety fencing or equivalent.
* Straw bales, sandbags (bags should be ultraviolet-stabilized geotextile fabric), soil material, or other appropriate materials that can be used to construct a containment system (above grade system)
* Metal pins or staples at a minimum of six inches in length, sandbags, or alternate fasteners to secure polyethylene lining to the containment system.
* Non-collapsing and non-water holding cover for use during rain events. (optional)

Installation:

* Utilize and follow the design in the storm water pollution prevention plan to install the system.
* Dependent on the type of system, either excavate the pit or install the containment system.
* A base shall be constructed an prepared that is free of rocks and other debris that may cause tears or punctures in the polyethylene lining.
* Install the polyethylene lining. For excavated systems, the lining should be extended over the entire excavation. The lining for bermed system should be installed over the pooling area with enough material to extend the lining over the berm or containment system. The lining should be secured with pins, staples,or other fasteners.
* Place flags, safety fencing, or equivalent to provide a barrier to construction equipment and other traffic.
* Place non-collapsing, non-water holding cover over the washout facility prior to predicted rainfall event to prevent accumulation of water and possible overflow of the system (optional).
* Install signage that identifies concrete washout areas.
* Post signs directing contractors and suppliers to designated locations.
* Where necessary, provide stable ingress and egress or alternative approach pad for concrete washout systems.

(CW) CONCRETE WASHOUT DETAIL

* NOT PAID FOR SEPARATELY

BRIAN K. ARTERBERY REGISTERED No. 19800103 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL B. K. Arterbery 04/28/2017
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HAMILTON COUNTY
HIGHWAY DEPARTMENT

TEMPORARY EROSION CONTROL
DETAILS

HORIZONTAL SCALE	BRIDGE FILE
1"=20'	HAMILTON CO. BR. 306
VERTICAL SCALE	DESIGNATION
N/A	PB-14-0004
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Construction Plan Elements (Section A)

A-1 Index showing locations of required Plan Elements.
Sheet 13 (This Sheet)

A-2 11x17 inch plat showing building lot numbers/boundaries and road layout/names.
Sheet 3 contains location information.

A-3 Narrative describing the nature and purpose of the project.
The proposed project will consist of construction of a new 27-foot span bridge, while reconstructing and raising the profile of Cyntheanne Road.

A-4 Vicinity map showing project location.
Sheet 1 (Title Sheet)

A-5 Legal Description of the Project Site
Specifically, the project site is located in: Indiana, Hamilton County, Township: 18N, Range: 6E, Section: 17 & 18, Civil Township: Wayne, Quarter: Multiple. The Latitude and Longitude for the center of the project is as follows: Latitude: 40°00'33" North, Longitude: 85°52'52" West

A-6 Location of all lots and proposed site improvements.
The bridge to be constructed and the anticipated work limits are shown on Sheets 7-9.

A-7 Hydrologic unit code (14 digit)
05120201110030 (Mud Creek - Headwaters)

A-8 Notation of any State or Federal water quality permits.
IDEM 401 Water Quality Certification
USACE Section 404 permit
Rule 5 permit
IDNR CIF

A-9 Specific points where stormwater discharge will leave the site.
Stormwater will sheet flow from the site - it will migrate its way into an un-named tributary to Mud Creek - see Plan and Profile view on Sheets 7-9.

A-10 Location and name of all wetlands, lakes and water courses on and adjacent to the site.
No wetlands or lakes are located within the project limits. An un-named tributary to Mud Creek is located nearby but not within the project limits.

A-11 Identification of all receiving waters.
Entirety of the project runoff will be deposited into un-named tributary to Mud Creek.

A-12 Identification of potential discharges to ground water.
There are no known areas within the project site where stormwater will be discharged to groundwater.

A-13 100 year floodplains, floodways, and floodway fringes.
Most of the project is within a 100-year floodplain. Enclosed map shows the impacted location.

A-14 Pre-construction and post construction estimate of Peak Discharge (10 year storm event)
Due to the nature of the project, bridge construction and construction of existing road; there will be no significant change in the pre-construction to post-construction peak discharge.

A-15 Adjacent landuse
Adjacent land is dominated by agricultural farm land and residential properties.

A-16 Locations and approximate boundaries of all disturbed areas.
Sheets 7-9 shows the anticipated work areas. Disturbance is anticipated to remain within the designated construction limits.

A-17 Identification of existing vegetative cover.
Vegetation within right of way consists of grasses, shrubs and trees.

A-18 Soils map including soil descriptions and limitations.
Soil Map can be found in the USGS Soil Survey of Hamilton County, In. The construction site is mostly composed of Pn with a small amounts of MoC3 and HeF on each end of the project limits.

Pn - Patton silty clay loam: Slopes are 0 to 2 percent. This component is on depressions on till plains. The parent material consists of loamy glaciolacustrine deposits over loamy outwash. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is moderate. This soil is not flooded. It is frequently ponded.

MoC3 - Miami clay loam: Slopes are 6 to 12 percent. This component is on till plains, till plains. The parent material consists of loamy till. Depth to a root restrictive layer, densic material, is 24 to 40 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded.

HeF - Henepin loam: Slopes are 18 to 50 percent. This component is on till plains. The parent material consists of loamy till. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded.

A-19 Locations, size and dimensions of proposed stormwater systems.
See Sheets 7-9 for location, size and dimensions of stormwater improvements.

A-20 Plans for any off-site construction activities associated with this project.
No offsite construction activities are proposed in association with this project.

A-21 Locations of proposed soil stockpiles and/or borrow/disposal areas.
No off site disposal is anticipated for this project. If contractor decides that off site disposal is required an amended/additional Rule 5 plan shall be submitted in accordance with 327-IAC-15-5 for those areas not included in the Design Consultant's submittal or as necessary for changes initiated by the Contractor as per INDOT Standard Specification 108.04. The Contractor shall be responsible for all required disposal sites and obtaining all required permits associated with the disposal site activities in accordance with INDOT Standard Specification 203.08. Silt fence or other perimeter protection shall fully encompass the storage piles. Temporarily seed stockpiles which will be undisturbed for more than 7-days. Stockpiles shall not interfere with natural drainage, The use of stockpiles is anticipated to be minimal due the minimal space available on the site, however, if utilized, several small stockpiles, are usually more efficient and easier to contain than one large pile.

A-22 Existing site topography.
See Plan and Profile Sheets 7-9 and Cross-Sections 31-39.

A-23 Proposed final topography.
See Plan and Profile Sheets 7-9 and Cross-Sections 31-39.

Stormwater Pollution Prevention Plan - Construction Component (Section B)

B-1 Description of potential pollutant sources associated with the construction activities:
Potential pollutant sources associated with the construction activity include those normally associated with construction equipment, such as: concrete washout water, oils, fuels, hydraulic fluids, transmission fluids, brake fluid, antifreeze, greases, brake dust, etc. All heavy equipment shall be parked on site at a specific location, when not in use; leakage from the equipment will be captured by the surrounding terrain, and will not be provided a direct path to the surrounding waterways or storm sewer system. Construction litter and trash is also a potential pollutant. Additionally, sediment generated from the construction activity and equipment is a potential pollutant.

B-2 Initial Setup:
Upon completion of the initial site inspection, and before any vegetation is removed from the site, this erosion and sediment control plan shall be implemented. The plan must be dynamic and ever changing as the project develops. Proper sequencing of work may reduce the amount of bare soil and therefore reduce the need for extensive erosion and sediment control measures. Continual maintenance and updating of the plan by the construction contractor is of utmost importance. Below is a general sequencing of events for this erosion and sediment control plan. While the Contractor shall dictate the actual sequencing of construction, erosion and sediment control measures shall be implemented as described below during each phase of construction.

1. Flag or denote all construction limits.
2. Establish areas for storage of potential pollutants (e.g. fuel storage, oils, hydraulic fluids, etc.)
3. A pre-construction meeting with the owner, contractor, appointed "trained individual" and Hamilton County SWCD is required.
4. Notify the IDEM and Hamilton County SWCD at least 48-hours prior to commencement of work.
5. Identify and protect all existing vegetation designated to be undisturbed.
6. Install erosion and sediment control perimeter protection (see temporary erosion control plans/tables). Construction of road side ditches, diversion berms, and installation of silt fence prior to earth moving will greatly reduce the chance of sediment discharge; protecting adjacent property and reducing the chance of sediment discharge into jurisdictional waterways. Proposed locations for these measures are shown on the plans, but may need to be modified and/or replaced based on the phasing and locations of active construction.
7. Install concrete washouts where needed to ensure that no concrete washout water enters the stormwater system, comes in contact with the ground, or leaves the project limits. The concrete washouts shall be in accordance with the detail shown on the plans.

B-3 Construction Entrance:
The Contractor shall provide a stable construction entrance at all points where construction traffic will enter onto an existing road. The number and locations of the construction entrances will be dependent upon construction phasing and the amount of site disturbance. Contractor shall amend the plan in accordance with INDOT Standard Specification 108.04 to show the actual entrance locations at various stages of construction. At a minimum, construction entrances shall conform to INDOT Standard Drawing E 205-TECP-01.

B-4 Sediment control measures for sheet flow areas:
Silt Fence (SF): Shall be installed as needed to protect adjacent properties from receiving sediment-laden runoff. Proposed locations for this measure is shown on the plans, but may need to be modified and/or replaced based on the phasing and locations of active construction. SF shall be installed per INDOT Standard Drawing E 205-TECP-02

Vegetative Filter Strip (VFS): A vegetative filter strip is an area where the ground cover is to be left undisturbed to filter runoff from the disturbed drainage area. All existing vegetation located outside of the construction limits, shall not be disturbed, to act as vegetative filter strips. In some cases, no silt fence or filter socks may be needed if a minimum 20-foot vegetative filter is left between disturbed areas and the edge of the easement or a concentrated flow area.

B-5 Sediment control measures for concentrated flow areas:
Temporary Sediment Trap (ST): Sediment traps shall be constructed in the locations shown on the plans to collect runoff and allow for sediment to drop out prior to discharge. STs shall be constructed in accordance with INDOT Standard Drawing E 205-TECD-03.
Temporary Check Dams (CD): Rip Rap Check dams are used to reduce erosion in a drainage channel by slowing the velocity of the flow. Check dams shall be installed as soon as possible upon grading of constructed channels. Check dams shall also be installed in existing channels that will be receiving flow until the new channels are constructed. Once ditches are to grade, permanent erosion control measures (seeding, mulching, and/or erosion control blankets) shall be placed as soon as possible after ditch grading is completed. During construction, if ditch flow patterns change, erosion control measure locations may need to be adjusted so that no areas are left unprotected. Check dams shall be installed "toe-to-crest" such that the spillway of the downstream check dam is at the same elevation of the toe of the upstream dam in accordance with INDOT Standard Drawing E 205-TECD-01.
Erosion Control Blanket (ECB): Erosion control blankets shall be installed following grading and seeding of the specified roadside ditches to prevent erosion and assist with vegetation establishment. In areas of the roadside ditches where seeding and mulching has resulted in permanent vegetation reaching 100% coverage/70% density, no erosion control blankets will be needed.

B-6 Storm sewer inlet protection measure locations and specifications:
Inlet Protection (IP): Temporary drop inlet protection will be placed on the proposed inlet immediately after installation and be properly protected in accordance with INDOT standard drawings E-205-TECI-04 & 05. Other methods may be employed with prior approval of the Engineer and the MSD.

B-7 Runoff control measures:
Concrete Washout (CW): Concrete washout areas shall be installed and utilized as containment for washing equipment of uncured concrete and associated liquids. They shall be constructed according to details shown on the plans and the Indiana Storm Water Quality Manual. All concrete washout water shall be discharged to a concrete washout area. CW's will be placed a minimum of 50 feet from any body of water and located away from inlets and stormwater conveyances. They shall be placed on stable material and in such a manner that all washout water is captured and contained in the CW. Detail shown on Sheet 12.

Dewatering (D): All dewatering to remove standing water from disturbed areas of the project shall be performed through a properly sized filter bag, which will be placed behind an appropriately sized secondary containment measure in accordance with the detail shown on Sheet 12.

B-8 Stormwater outlet protection specifications:
Not Applicable

B-9 Grade stabilization structure locations and specifications:
Not Applicable

B-10 Locations, dimensions, specifications and constr. details of each stormwater quality measure:
The location and dimensions of all stormwater quality measures can be found on Sheets 10-13. Additionally, construction details can be found in the Indiana Storm Water Quality Manual and INDOT Standard Drawings.

Stormwater Pollution Prevention Plan - Construction Component (Section B)(Cont'd)

B-11 Temporary surface stabilization methods appropriate for each season:
Temporary surface stabilization shall be accomplished by the use of a temporary seed mixture along with temporary mulching. The temporary seed mixture shall be used to establish a temporary cover for disturbed soils during the construction operations. Temporary seeding shall be placed on disturbed areas that are expected to be undisturbed for more than 7 days or as directed by the Engineer. Placement of the temporary surface stabilization shall be per INDOT Standard Specifications, Section 205-R-636.

B-12 Permanent surface stabilization specifications:
Where pavement is not proposed, permanent surface stabilization shall be achieved by the use of a permanent seed mixture, along with mulching material/erosion control blankets and fertilizer or sod. Placement of the permanent surface stabilization shall occur upon final grading of an area and shall be per INDOT Standard Specifications, Section 621-R-637, unless otherwise specified.

B-13 Material handling and spill prevention plan:
Any onsite storage of hazardous materials/potential pollutants, such as diesel fuel, shall be stored onsite surrounded by an earthen dike or other secondary containment system having a storage volume equal to 150% of tank capacity, to contain potential pollutants. Any additional means of containing releases should be accessible to a petroleum storage area; this would include various absorbent materials. In the event of a release, a licensed environmental consulting company, should be contacted for spill cleanup assistance. Furthermore, all equipment, when not in use, shall be parked onsite in an area that, should potential pollutants leak, will be contained within the immediate area and will not be inadvertently conveyed to drainage swales and away from the project. Any leakage of pollutants from storage vessels or equipment shall be cleaned up and disposed of offsite in a legal manner. In the event of a release, a licensed environmental consulting company shall be contacted for spill cleanup assistance. The spill shall be reported to both IDEM's 24-hour emergency response line at (888) 233-7745 and the MSD Bureau of Water Quality (765)747-4896.

B-14 Monitoring and maintenance guidelines for each proposed pollution prevention measure:
Temporary erosion and sediment control measures shall be self-inspected by Contractor personnel or their representative, knowledgeable in erosion and sediment control, once every seven days and within 24 hours of a 1/2 inch measurable storm event.

Inspections shall be documented and records shall be maintained by the Contractor and be made available for review upon request. Records shall include, at a minimum, date, inspector's name, maintenance and corrections needed based on the inspection, and status of previously identified deficiencies. INDOT Form 108-c-192d: Storm Water, Erosion, and Sediment Control Inspection Report is available on INDOT's website for use. The temporary protection measures shall be returned to good working condition within 48 hours after inspection or as directed. Inspections shall continue until the entire contract is complete and has been permanently stabilized and the Notice of Termination has been filed with the reviewing authority.

The following shall apply to maintaining the specific erosion and sediment control facilities:

- The Erosion and Sediment Control Measures shall be installed and maintained in accordance with the details shown in the drawings, INDOT Standard Specifications Section 205-R-637, INDOT Standard Drawings, and IDEM Storm Water Quality Manual.
- The Contractor or their representative, knowledgeable in erosion and sediment control, shall routinely inspect the overall performance of erosion and sediment control facilities and areas downstream of the project site. If eroded material/silt is apparent downstream from the facilities, some failure has occurred, and the inspector shall notify the Contractor and Engineer. The Contractor shall remove the accumulated sediment downstream and add additional erosion control measures to address the issues as necessary. The contractor shall implement all recommended solutions to the problem areas as recommended by the Engineer, IDEM, SWCD or Hamilton County SWCD inspector within 48 hours or as directed by the Engineer.

Following completion of construction and final stabilization of all disturbed areas, the Contractor shall dismantle the remaining temporary erosion and sediment control elements. The contractor shall remove any unsuitable material from the site left from the erosion and sediment control measures. The disturbed areas, following removal of the temporary measures, shall be stabilized with permanent vegetation. When all construction is complete, temporary measures have been removed, and vegetation is established, Hamilton County SWCD must complete a final release inspection. The contractor shall file a Notice of Termination (NOT) with the IDEM , submit a copy to the Hamilton County SWCD, and complete all other required NOT actions in accordance with INDOT Construction Memorandum 16-02.

B-15 Erosion and sediment control specifications for individual building lots:
Not applicable.

Stormwater Pollution Prevention Plan - Post Construction Component (Section C)

C-1 Description of pollutants and their sources associated with the proposed land use:
Additional pollutant sources will be from trash (both organic and inorganic), lawn chemicals, grass clippings, grit brought in from the existing surrounding roads from various vehicles (fuel, antifreeze, oil, grease, brake dust, brake fluid, transmission fluid, other hydrocarbons, etc.), pet and other animal waste, etc.

C-2 Sequence describing stormwater quality measure implementation:
Upon completion of all bridge and road work most of the site will be paved. Shoulders, ditches and other disturbed areas will be seeded, mulched or sodded to develop vegetative filter strips. Slopes directly under the new bridge will be protected with rip rap. All existing vegetation outside of the project limits will not be disturbed, and this vegetation will continue to filter out pollutants from the stormwater prior to it leaving the site, and entering into the surrounding water sources.

C-3 Description of proposed post construction stormwater quality measures:
The above referenced measures will serve as filtering measures, to reduce the amount of pollutants contained within the stormwater as it leaves the project site. Additionally, the measures will serve to reduce the amount of erosion within the project site, thus reducing the amount of sediment within the stormwater.

C-4 Location, dimensions, specifications and construction details of each stormwater quality measure:
The entire project site will be seeded in accordance with Construction Component "Section B" of this Storm Water Pollution Prevention Plan.

C-5 Description of maintenance quidelines for proposed post-construction water quality measures:
Erosion and sediment control: Repair and revegetate eroded areas in the project site. These measures will be implemented, as needed, based on regular inspections by the appropriate government agency.

Other maintenance shall be in accordance with Hamilton County standard operating procedures following construction in regards to inspections, mowing and right-of-way maintenance, debris and litter removal, nuisance control, sediment removal, and necessary repairs.

BRIAN K. ARTERBERY REGISTERED No. 19800103 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER — 04/28/2017 DATE

DESIGNED: BSS | DRAWN: DJG

CHECKED: BKA | CHECKED: BSS

HAMILTON COUNTY
HIGHWAY DEPARTMENT

TEMPORARY EROSION CONTROL
INFORMATION SHEET

HORIZONTAL SCALE	BRIDGE FILE
1"=20'	HAMILTON CO. BR. 306
VERTICAL SCALE	DESIGNATION
N/A	PB-14-0004
SURVEY BOOK	SHEETS
	13 of 39
CONTRACT	PROJECT
	PB-14-0004

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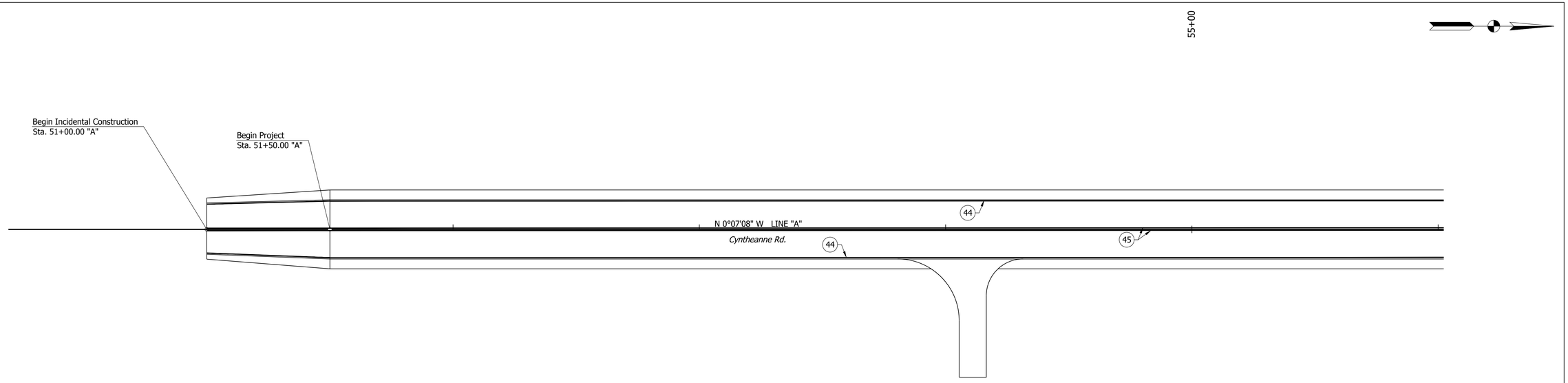

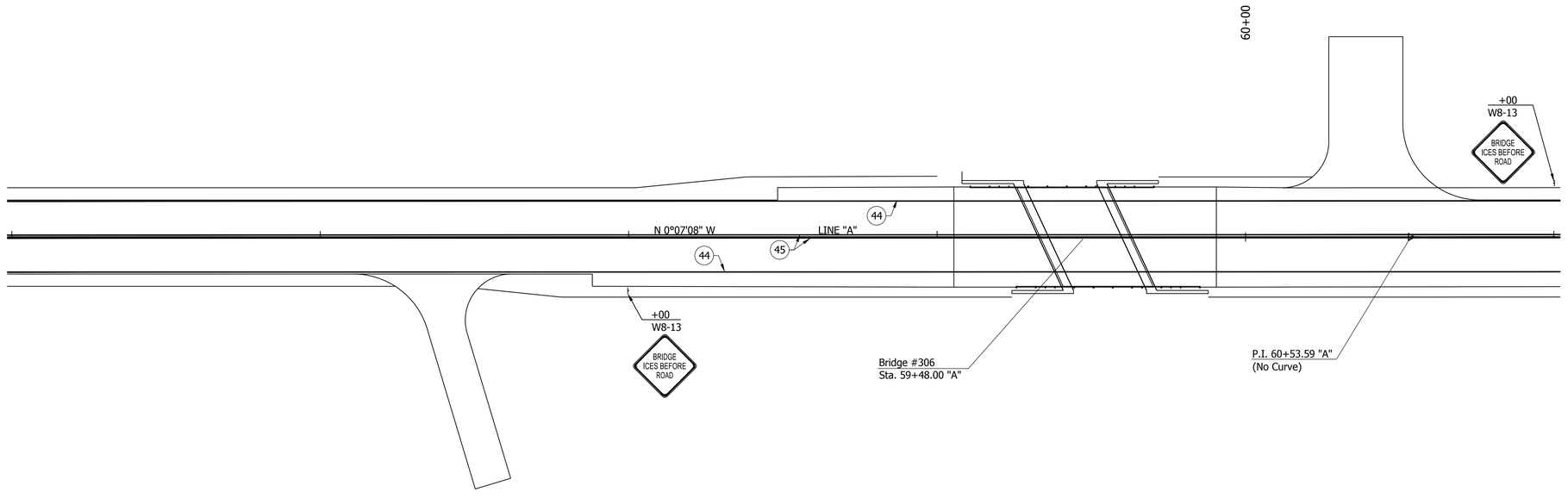

LEGEND

(44) Line, Multi-Component, Solid, White, 4 IN.

(45) Line, Multi-Component, Solid, Yellow, 4 IN.

BRIAN K. ARTERBERY REGISTERED No. 19800103 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER 04/28/2017 DATE

DESIGNED: BSS DRAWN: DJG

CHECKED: BKA CHECKED: BSS

HAMILTON COUNTY
HIGHWAY DEPARTMENT

PAVEMENT MARKING AND SIGNING
STA. 51+00.00 TO STA. 61+00.00

HORIZONTAL SCALE	BRIDGE FILE
1"=20'	HAMILTON CO. BR. 306
VERTICAL SCALE	DESIGNATION
N/A	PB-14-0004
SURVEY BOOK	SHEETS
	14 of 39
CONTRACT	PROJECT
	PB-14-0004

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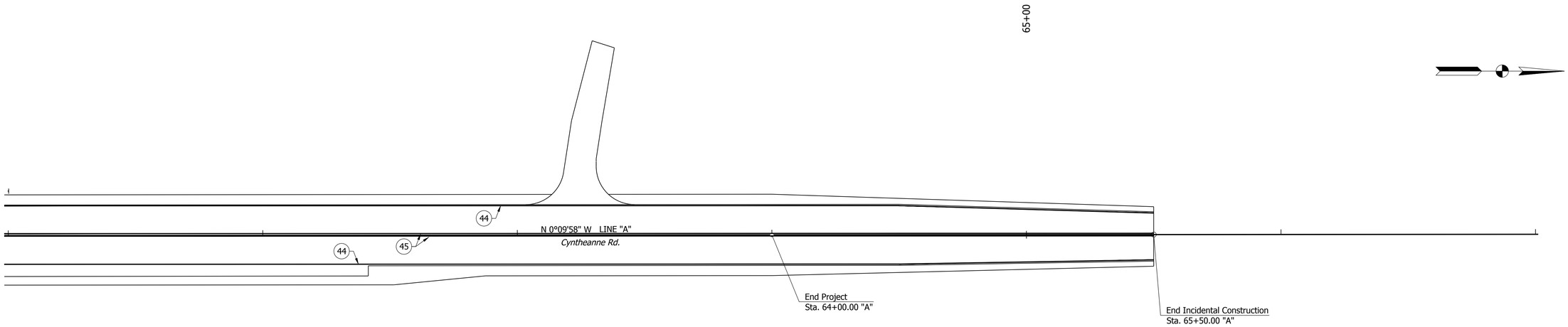

LEGEND

(44) Line, Multi-Component, Solid, White, 4 IN.

(45) Line, Multi-Component, Solid, Yellow, 4 IN.

BRIAN K. ARTERBERY REGISTERED No. 19800103 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER 04/28/2017 DATE

DESIGNED: BSS DRAWN: DJG

CHECKED: BKA CHECKED: BSS

HAMILTON COUNTY
HIGHWAY DEPARTMENT

PAVEMENT MARKING AND SIGNING
STA. 61+00.00 TO STA. 67+00.00

HORIZONTAL SCALE	BRIDGE FILE
1"=20'	HAMILTON CO. BR. 306
VERTICAL SCALE	DESIGNATION
N/A	PB-14-0004
SURVEY BOOK	SHEETS
	15 of 39
CONTRACT	PROJECT
	PB-14-0004

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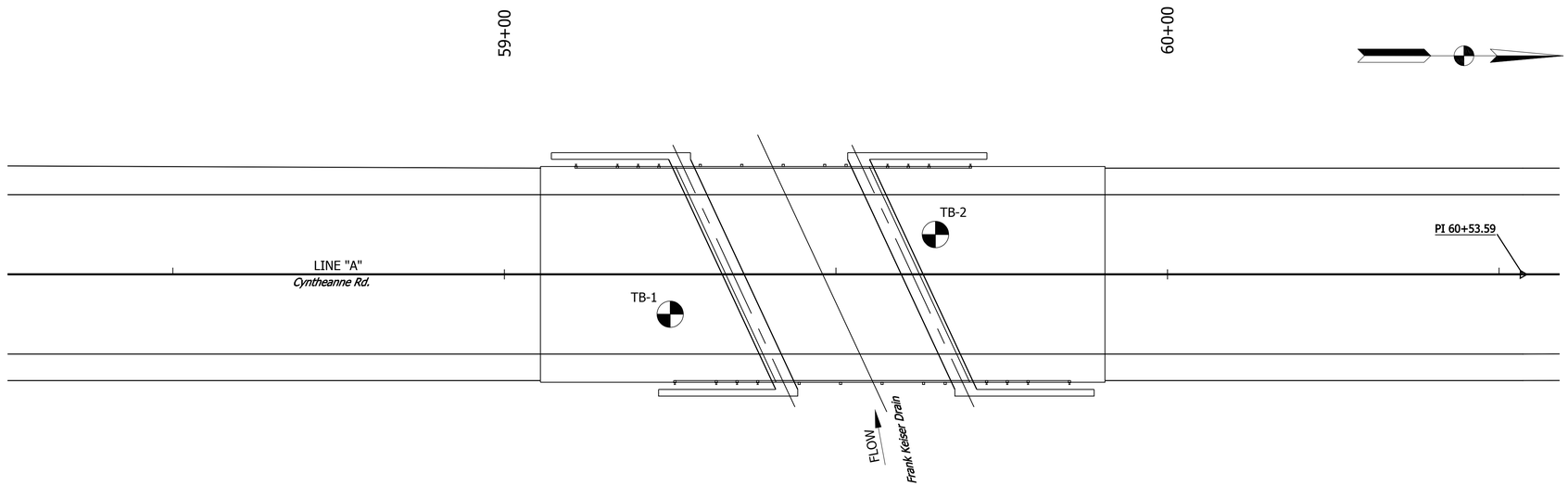

PLAN VIEW

PILE LOADING FOR GEOTECHNICAL TESTING

	BENT #1	BENT #2
Pile Size, Type & Grade	SEC 14x0.312, Gr.42	SEC 14x0.312, Gr.42
Factored Design Load	160 kip	160 kip
Factored Design Soil Resistance	160 kip	160 kip
Resistance Factor for Axial Compression	0.55	0.55
Downdrag Loads	0	0
Nominal Soil Resistance	291 kip	291 kip
Downdrag Friction	0	0
Scour Zone Friction	0	0
Relaxation of Tip in Shale	N/A	N/A
Nominal Driving Resistance	291 kip	291 kip
Estimated Pile Tip Elevation	801.00	801.00
Testing Method	INDOT Standard Specification 701.05(a)**	

** Restrike Of Piles Shall Be Performed After a Waiting Period of 2 Days After The Initial Drive.

LEGEND OF SAMPLE TYPES

SS-Split Spoon
RC-Rock Core
ST-Shelby Tube

EARTH EXPLORATION

LOG OF TEST BORING

Project: Small Structure 23034 Improvements
Location: Hamilton County, Indiana
Client: Lochmueller Group, Inc.
7770 West New York Street – Indianapolis, Indiana 46214
317-273-1690 / 317-273-2250 (Fax)

Boring No. TB-1
Elevation 834
Datum NAVD 88
EEI Proj. No. 1-15-401
Sheet 1 of 2

Project No. --- Struct. No. Hamilton SS 23034
Station 59+25 Offset 6 ft Rt. "A"
Weather Temp. Sunny 80° F
Driller Inspector B.J. ---

SAMPLE No.	Type	Rec %	N Value	Depth ft	Elev	DESCRIPTION/CLASSIFICATION and REMARKS	q_p tsf	q_u tsf	γ pcf	W %	LL %	PL %	PI %
						ASPHALTIC CONCRETE, 11 in.							
						GRANULAR SUBBASE							
SS-1	X	90	7			SILTY CLAY LOAM, very stiff, brown	2½			25.1			
SS-2	X	90	4		830	SANDY LOAM, very loose, moist, brown							
SS-3	X	90	21	5		SAND, medium dense, moist to wet, brown							
SS-4	X	90	15		825	GRAVELLY SAND, medium dense, wet, gray							
SS-5	X	90	21	10									
SS-6	X	90	23		820								
SS-7	X	90	25	15			4½			9.7			
SS-8	X	90	41		815	LOAM, hard to very stiff, gray, with sand seams below 29 ft	>4½			9.5			
SS-9	X	90	32	20			>4½			10.2			
SS-10	X	90	39	25	805		3			13.4			
				30		SAND AND GRAVEL, dense, wet, gray							

Continued Next Page

WATER LEVEL OBSERVATIONS

Depth ft	While Drilling	Upon Completion	After Drilling
To Water	8½	7	BF
To Cave-in		22½	

The stratification lines represent the approximate boundary between soil/rock types and the transition may be gradual.

GENERAL NOTES

Start 9/21/15 End 9/21/15 Rig CME 75
Drilling Method 3¼" I.D. HSA Truck
Remarks Backfilled with auger cuttings, bentonite chips and concrete patch at surface.

EARTH EXPLORATION

LOG OF TEST BORING

Project: Small Structure 23034 Improvements
Location: Hamilton County, Indiana
Client: Lochmueller Group, Inc.
7770 West New York Street – Indianapolis, Indiana 46214
317-273-1690 / 317-273-2250 (Fax)

Boring No. TB-1
Elevation 834
Datum NAVD 88
EEI Proj. No. 1-15-401
Sheet 2 of 2

Project No. --- Struct. No. Hamilton SS 23034
Station 59+25 Offset 6 ft Rt. "A"
Weather Temp. Sunny 80° F
Driller Inspector B.J. ---

SAMPLE No.	Type	Rec %	N Value	Depth ft	Elev	DESCRIPTION/CLASSIFICATION and REMARKS	q_p tsf	q_u tsf	γ pcf	W %	LL %	PL %	PI %
SS-11	X	90	39	35	800	SAND AND GRAVEL, dense, wet, gray							
SS-12	X	90	43	40	795	SANDY LOAM, dense to medium dense, wet, with occasional sand seams							
SS-13	X	90	28	45	790								
SS-14	X	55	50/.5	50	785		3			14.1			
SS-15	X	90	69	55	780	CLAY LOAM, hard, brown, possible cobble or boulder near 48 ft	>4½			11.1			
SS-16	X	105	82/0.9	60	775	SANDY LOAM, very dense, wet, brown, with wet sand seams							
						End of Boring at 60 ft<<C>>							
						Boring advanced from 30 to 60 ft on 12/21/15							

The stratification lines represent the approximate boundary between soil/rock types and the transition may be gradual.

EARTH EXPLORATION

LOG OF TEST BORING

Project: Small Structure 23034 Improvements
Location: Hamilton County, Indiana
Client: Lochmueller Group, Inc.
7770 West New York Street – Indianapolis, Indiana 46214
317-273-1690 / 317-273-2250 (Fax)

Boring No. TB-2
Elevation 834
Datum NAVD 88
EEI Proj. No. 1-15-401
Sheet 1 of 1

Project No. --- Struct. No. Hamilton SS 23034
Station 59+65 Offset 6 ft Lt. "A"
Weather Temp. Sunny 80° F
Driller Inspector B.J. ---

SAMPLE No.	Type	Rec %	N Value	Depth ft	Elev	DESCRIPTION/CLASSIFICATION and REMARKS	q_p tsf	q_u tsf	γ pcf	W %	LL %	PL %	PI %
						ASPHALTIC CONCRETE, 10 in.							
						GRANULAR SUBBASE (visual)							
SS-1	X	90	9			LOAM, very stiff, brown (possible fill)	2½			14.4			
SS-2	X	90	4		830	SILTY LOAM, medium stiff, dark gray	1			37.3			
SS-3	X	90	13	5		SANDY LOAM, medium dense, moist							
SS-4	X	90	12		825								
SS-5	X	90	12	10		GRAVELLY SAND, medium dense to very dense, wet, gray							
SS-6	X	90	13		820								
SS-7	X	90	14	15									
SS-8	X	90	61		815								
SS-9	X	90	60	20		LOAM, hard, gray	>4½			10.4			
SS-10	X	90	50	25	805		>4½			9.6			
				30		End of Boring at 30 ft<<C>>							

WATER LEVEL OBSERVATIONS

Depth ft	While Drilling	Upon Completion	After Drilling
To Water	8½	8½	BF
To Cave-in		13½	

The stratification lines represent the approximate boundary between soil/rock types and the transition may be gradual.

GENERAL NOTES

Start 9/21/15 End 9/21/15 Rig CME 75
Drilling Method 3¼" I.D. HSA Truck
Remarks Backfilled with auger cuttings, bentonite chips and concrete patch at surface.

ADAM C. STEURY
REGISTERED
No. 11400165
STATE OF INDIANA
PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL: Adam Steury, DESIGN ENGINEER, 04/28/2017 DATE

DESIGNED: ACS DRAWN: TAM
CHECKED: MAR CHECKED: ACS

HAMILTON COUNTY
HIGHWAY DEPARTMENT

SOIL BORINGS

HORIZONTAL SCALE	BRIDGE FILE
1"=10'	HAMILTON CO. BR. 306
VERTICAL SCALE	DESIGNATION
1"=10'	PB-14-0004
SURVEY BOOK	SHEETS
	16 of 39
CONTRACT	PROJECT
---	PB-14-0004

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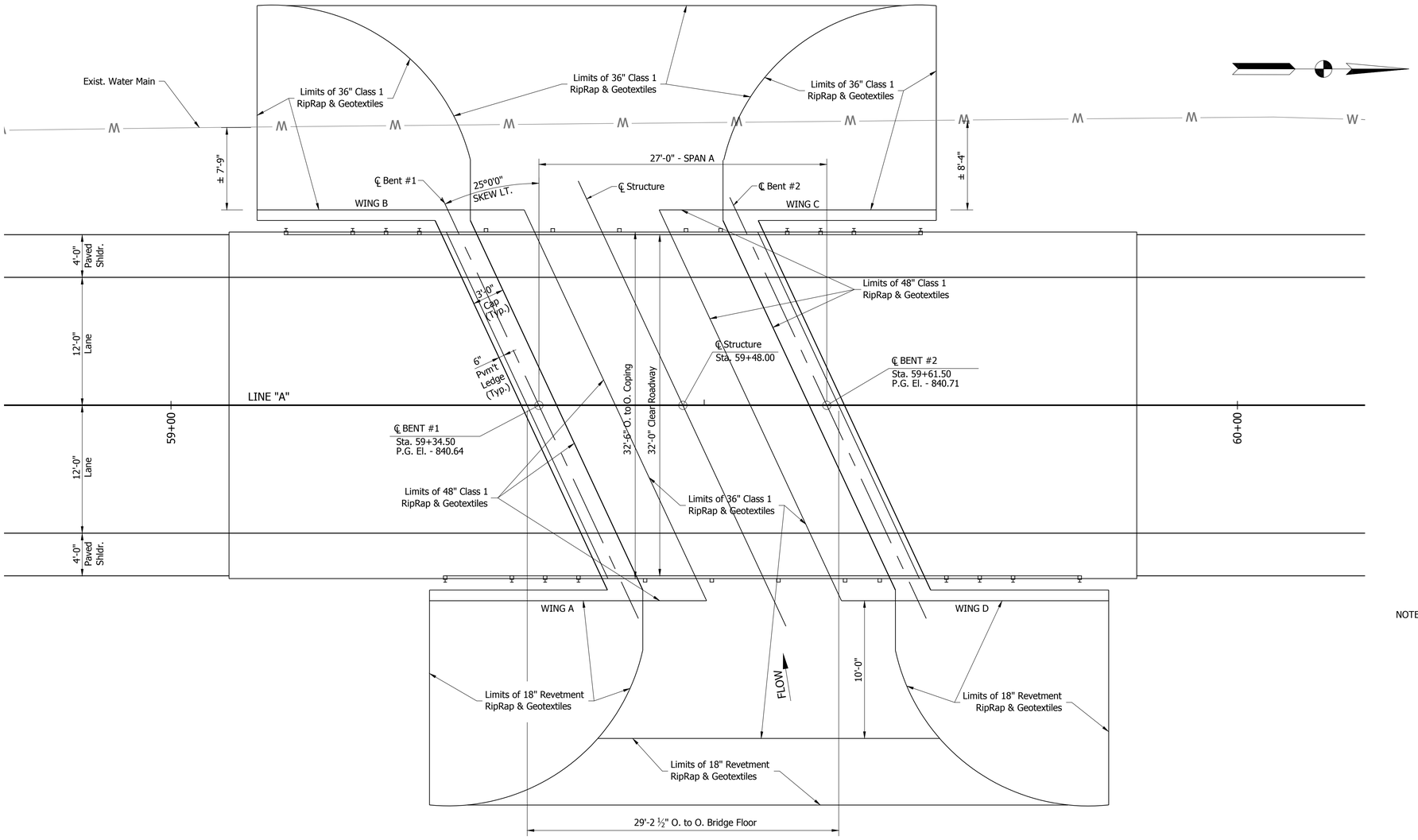

PLAN VIEW

NOTE: For Additional Class 1 Riprap Details, See Elevation View on Sheet 18.

CYNTHEANNE ROAD OVER FRANK KEISER DRAIN

REINFORCED CONCRETE SLAB BRIDGE

1 SPAN @ 27'-0"
CLEAR ROADWAY: 32'-0"
SKEW: 25°00'00" LT.

ADAM C. STEURY REGISTERED No. 11400165 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL Adam Steury 04/28/2017
DESIGN ENGINEER DATE

DESIGNED: ACS DRAWN: TAM
CHECKED: CRF CHECKED: ACS

HAMILTON COUNTY HIGHWAY DEPARTMENT

GENERAL PLAN

HORIZONTAL SCALE	BRIDGE FILE
3/16"=1'-0"	HAMILTON CO. BR. 306
VERTICAL SCALE	DESIGNATION
3/16"=1'-0"	PB-14-0004
SURVEY BOOK	SHEETS
	17 of 39
CONTRACT	PROJECT
----	PB-14-0004

Date: May 24, 2017, 12:38pm User Name: tracy
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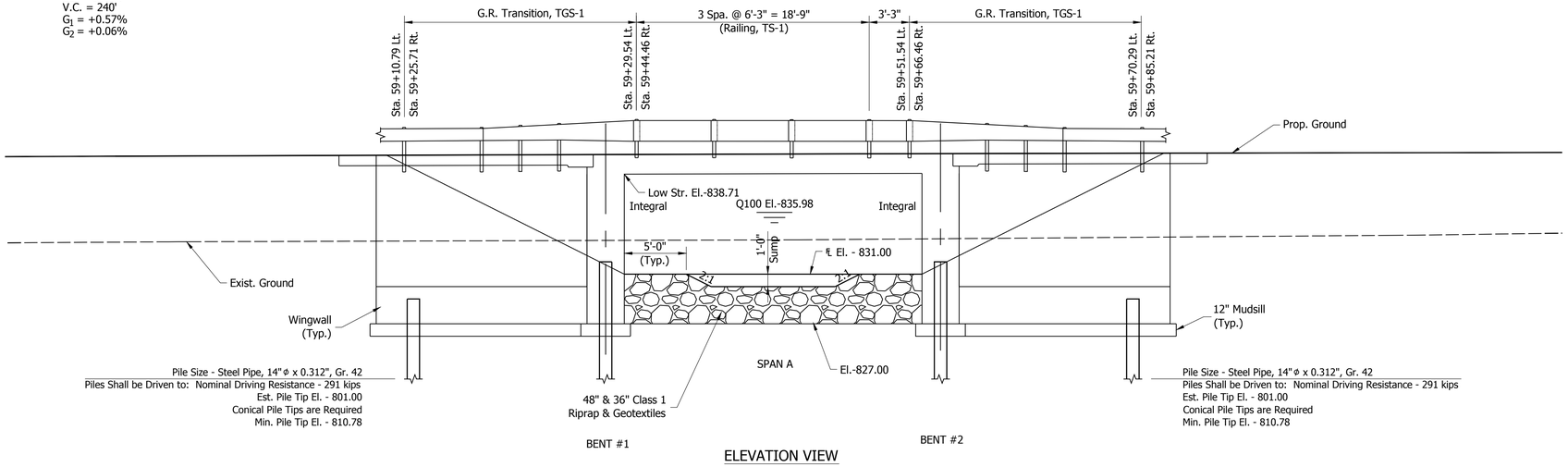
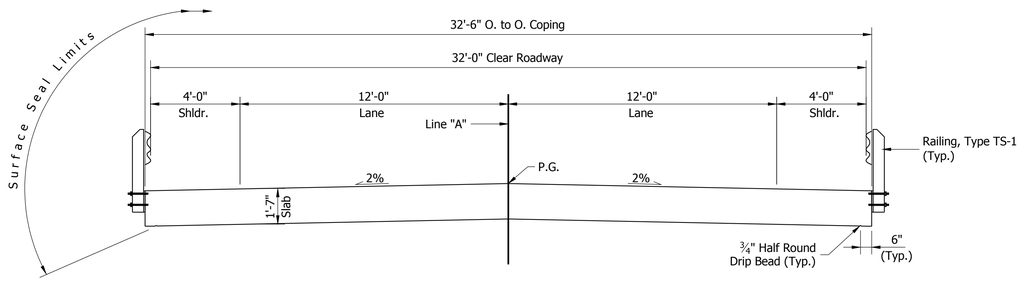
VERTICAL CURVE INFORMATION

PVI - 59+25.00
EL. = 840.77
V.C. = 240'
G_1 = +0.57%
G_2 = +0.06%

STRUCTURE TO BE BUILT TO A 240' VERTICAL CURVE



ELEVATION VIEW



TYPICAL CROSS SECTION
SCALE: 5/16" = 1'-0"

TYPICAL ROAD CROSS SECTION

See Sheet Nos. 4 & 5

DESIGN STRESSES

Class C Concrete: f'c= 4,000 psi

Reinforcing Steel (Grade 60): fy= 60,000 psi

DESIGN DATA

Live Load: The Bridge is Designed for HL-93 Loading. Loading in Accordance with AASHTO LRFD 7th Edition, 2014 Specifications & Interims thru 2015.

Dead Load: Actual Weight Plus 35 lbs/ft For Future Wearing Surface

Bridge Floor: Designed with a 1/2" Sacrificial Wearing Surface.

SEISMIC DATA

AASHTO LRFD Bridge Design Specifications with Interims.
Seismic Design Category 1
S1-0.0479
Site Class D
Fv=2.40

GENERAL NOTES

1. Reinforcing Steel Covering Shall Be 2" Unless Noted Otherwise.
2. Chamfer Exposed Edges 1" Unless Noted.
3. Concrete Requirements: Concrete in Superstructure to be Class "C".

RIPRAP & GEOTEXTILE QUANTITIES

	BENT #1	BENT #2
Geotextiles	213 yd^2	213 yd^2
Class 1 Riprap	223.5 Tons	223.5 Tons
Revetment Riprap	40.5 Tons	40.5 Tons

END BENT BACKFILL QUANTITIES

	BENT #1	BENT #2
Structure Backfill, Type 3	106 yd^3	107 yd^3

END BENT EXCAVATION QUANTITIES

	BENT #1	BENT #2
Excavation, Common	135.5 yd^3	135.5 yd^3
Excavation, Foundation, Unclassified	129.6 yd^3	133.8 yd^3

CYNTHEANNE ROAD OVER FRANK KEISER DRAIN

REINFORCED CONCRETE SLAB BRIDGE

1 SPAN @ 27'-0"
CLEAR ROADWAY: 32'-0"
SKEW: 25°00'00" LT.

ADAM C. STEURY
REGISTERED
No. 11400165
STATE OF INDIANA
PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER 04/28/2017 DATE

DESIGNED: ACS DRAWN: TAM
CHECKED: CRF CHECKED: ACS

HAMILTON COUNTY
HIGHWAY DEPARTMENT

GENERAL PLAN

HORIZONTAL SCALE	BRIDGE FILE
3/16"=1'-0"	HAMILTON CO. BR. 306
VERTICAL SCALE	DESIGNATION
3/16"=1'-0"	PB-14-0004
SURVEY BOOK	SHEETS
	18 of 39
CONTRACT	PROJECT
----	PB-14-0004

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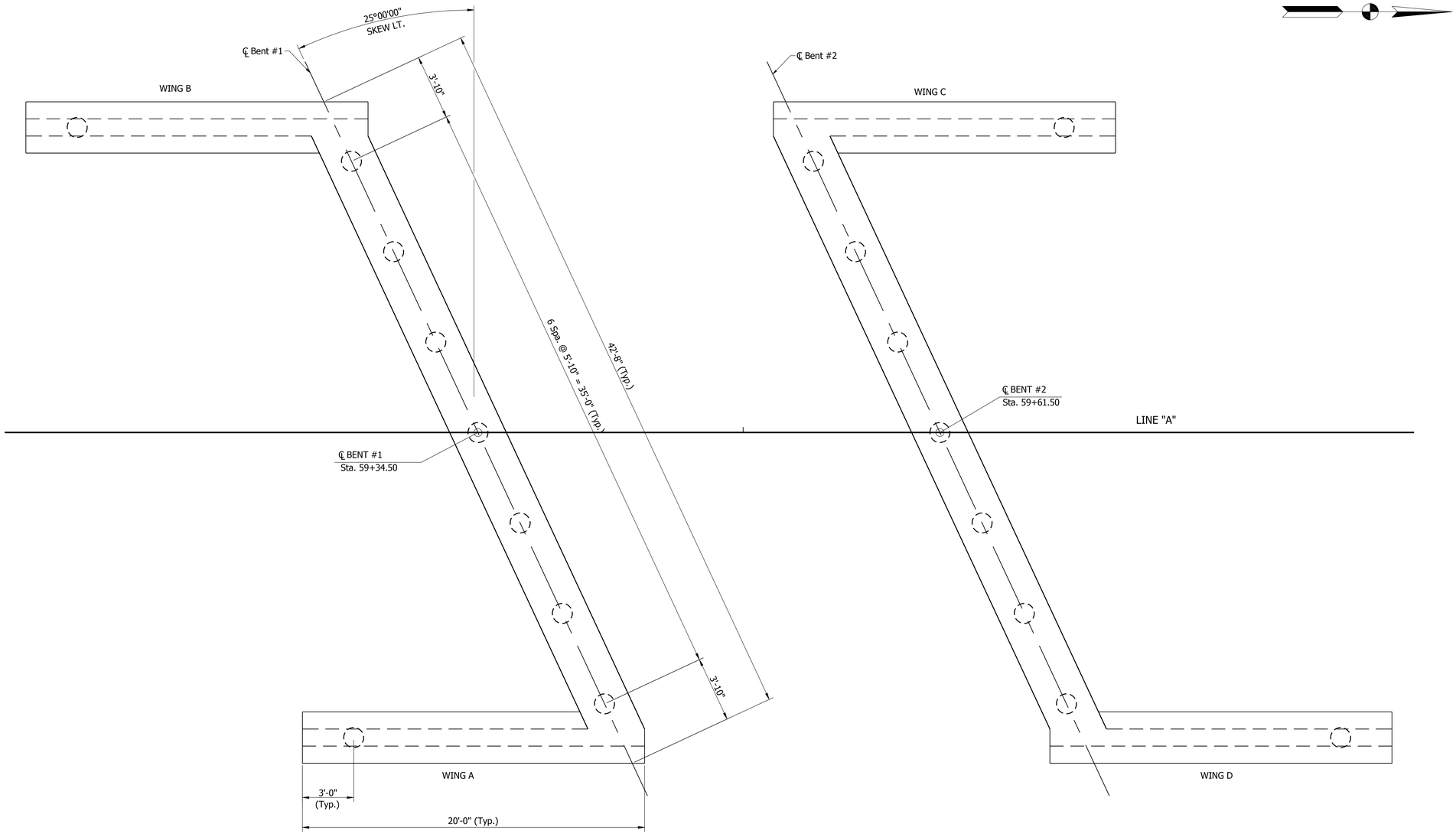

NOTE: Proposed Piles are Steel Pipe, 14" ⌀ x 0.312" Piles.
Piles Shall be Driven to Nominal Driving
Resistance Shown in Table on Sheet 16.
Conical Pile Tips are Required.

PLAN VIEW

ADAM C. STEURY
REGISTERED
No. 11400165
STATE OF INDIANA
PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER 04/28/2017 DATE

DESIGNED: ACS DRAWN: TAM

CHECKED: JRG CHECKED: ACS

HAMILTON COUNTY
HIGHWAY DEPARTMENT

FOUNDATION LAYOUT

HORIZONTAL SCALE	BRIDGE FILE
5/16"=1'-0"	HAMILTON CO. BR. 306
VERTICAL SCALE	DESIGNATION
5/16"=1'-0"	PB-14-0004
SURVEY BOOK	SHEETS
	19 of 39
CONTRACT	PROJECT
----	PB-14-0004

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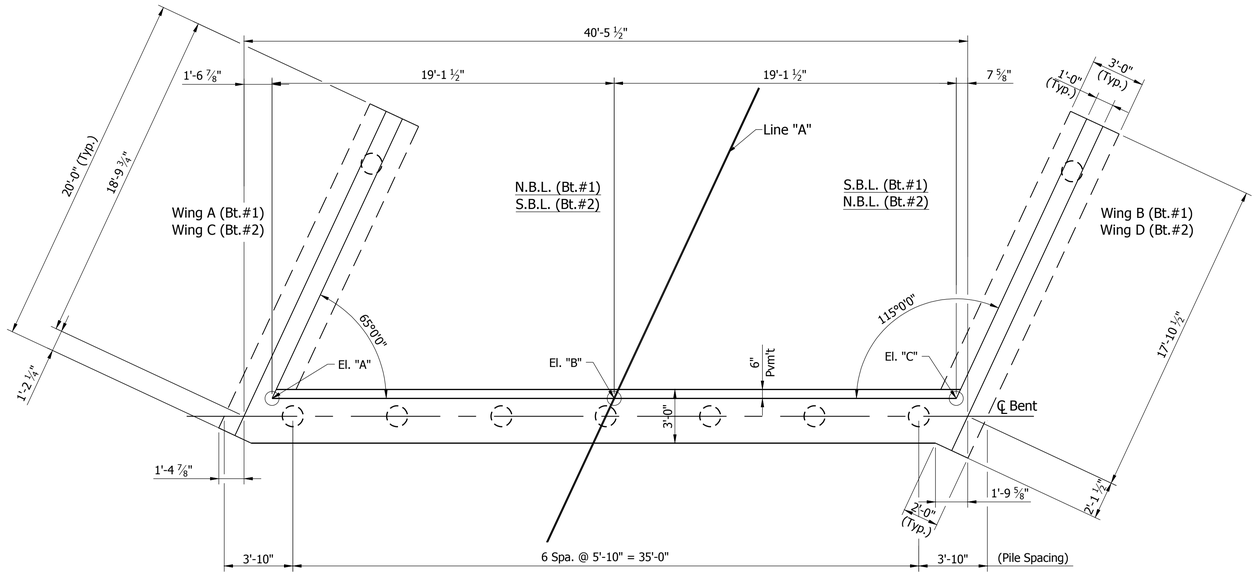
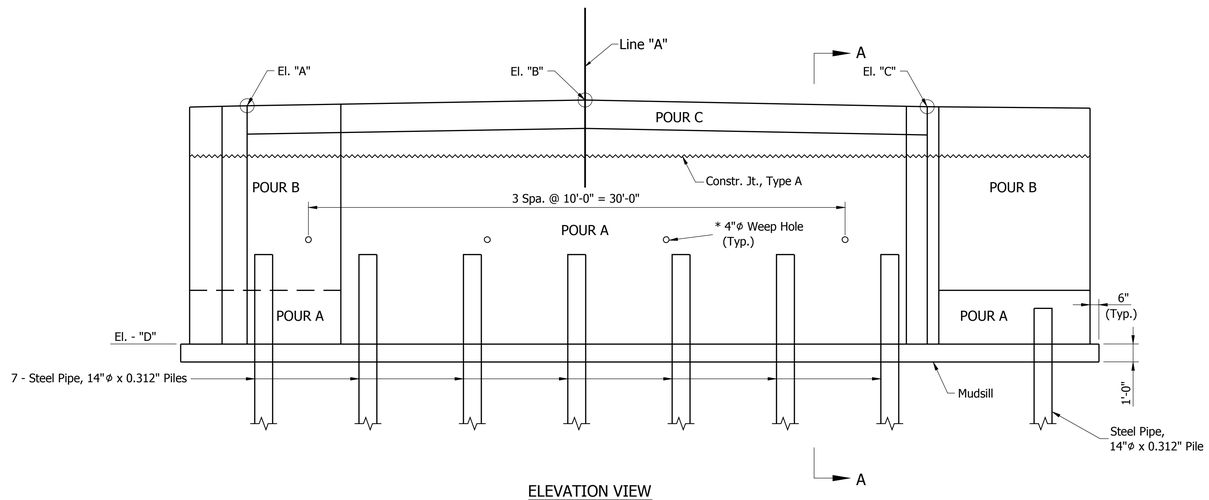
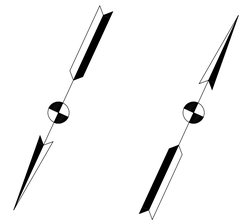


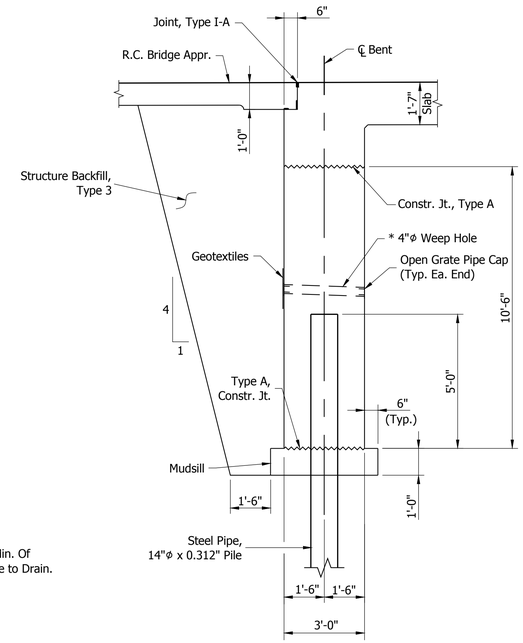
PLAN VIEW
BENT #1 SHOWN, BENT #2 SIMILAR



ELEVATION VIEW
BENT #1 SHOWN, BENT #2 SIMILAR



BENT #1 BENT #2



SECTION A-A
SCALE: 3/8" = 1'-0"

* Weep Holes Shall Be Placed A Min. Of 1'-0" Above Top Of Riprap. Slope to Drain.

END BENT ELEVATIONS		
ELEV.	BENT #1	BENT #2
A	840.32	840.39
B	840.64	840.72
C	840.27	840.35
D	827.00	827.00

NOTE: Conical Pile Tips are to be Used on Each Pile.

ADAM C. STELZ REGISTERED No. 11400165 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL Adam Stelz 04/28/2017
DESIGN ENGINEER DATE

DESIGNED: ACS DRAWN: TAM
CHECKED: JRG CHECKED: ACS

HAMILTON COUNTY HIGHWAY DEPARTMENT

END BENT #1 & #2 CONSTRUCTION

HORIZONTAL SCALE	BRIDGE FILE
1/4"=1'-0"	HAMILTON CO. BR. 306
VERTICAL SCALE	DESIGNATION
1/4"=1'-0"	PB-14-0004
SURVEY BOOK	SHEETS
	20 of 39
CONTRACT	PROJECT
----	PB-14-0004

Date: May 24, 2017, 12:38pm User Name: tracy
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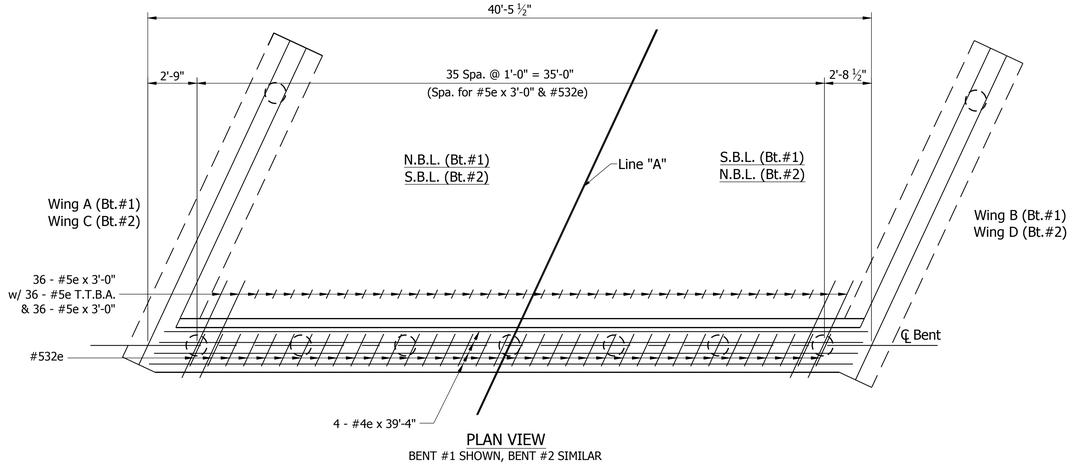
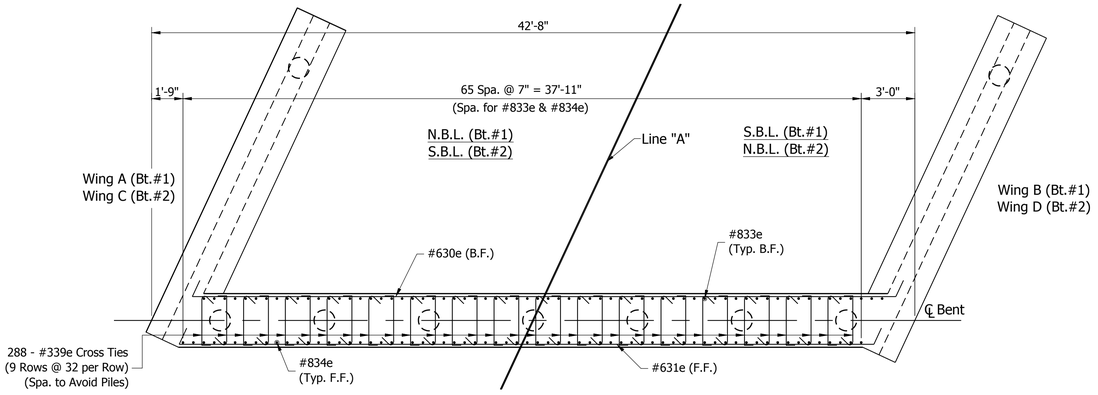
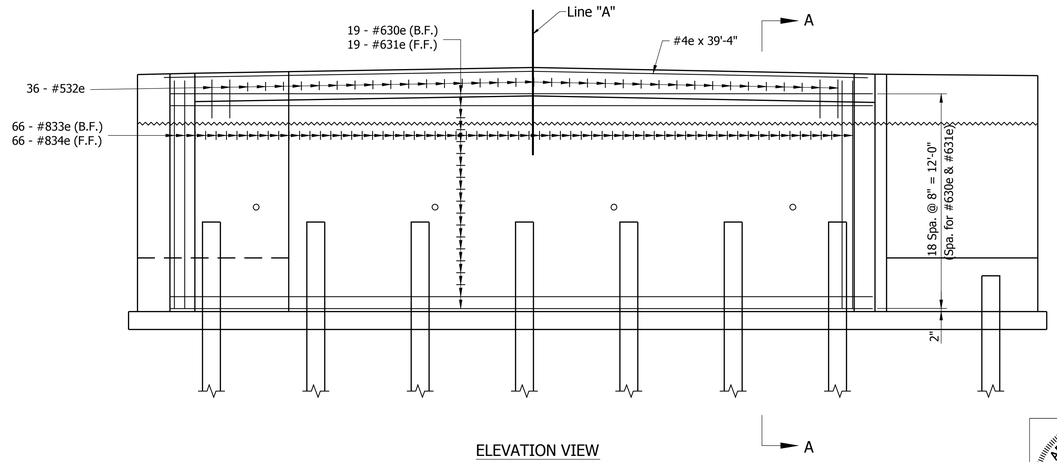


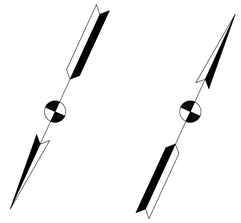
PLAN VIEW
BENT #1 SHOWN, BENT #2 SIMILAR



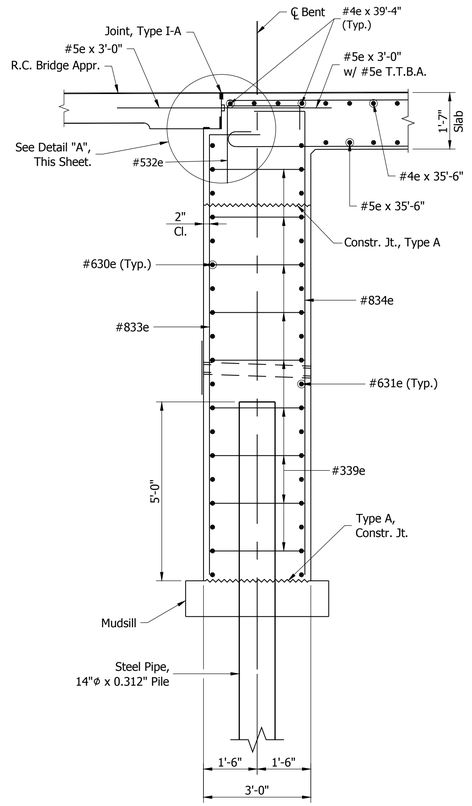
CAP PLAN VIEW
BENT #1 SHOWN, BENT #2 SIMILAR



ELEVATION VIEW
BENT #1 SHOWN, BENT #2 SIMILAR

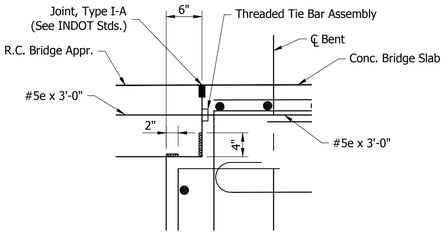


BENT #1 BENT #2



SECTION A-A
SCALE: 1/2" = 1'-0"

NOTES: F.F. - Denotes Front Face
B.F. - Denotes Back Face
T.T.B.A. - Denotes Threaded Tie Bar Assembly



1/2" Expanded Polystyrene

DETAIL "A"
SCALE: 1" = 1'-0"

ADAM C. STEURY
REGISTERED
No. 11400165
STATE OF INDIANA
PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL — DESIGN ENGINEER — 04/28/2017 DATE

DESIGNED: ACS DRAWN: TAM

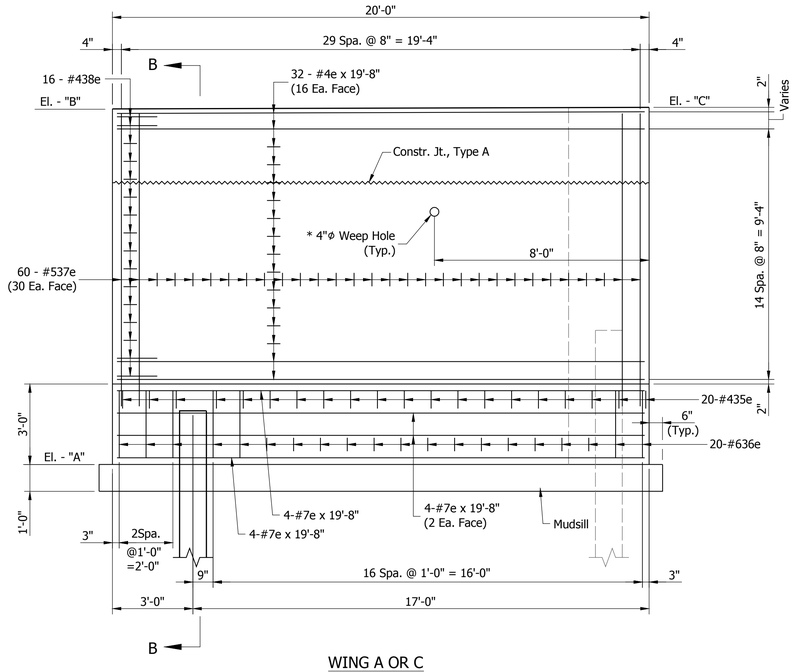
CHECKED: JRG CHECKED: ACS

HAMILTON COUNTY
HIGHWAY DEPARTMENT

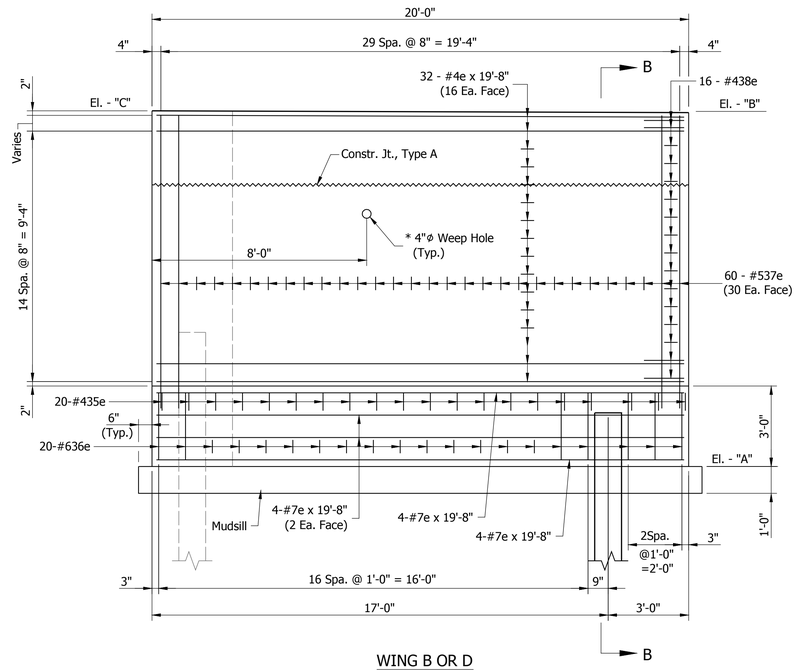
END BENT #1 & #2 DETAILS

HORIZONTAL SCALE	BRIDGE FILE
1/4"=1'-0"	HAMILTON CO. BR. 306
VERTICAL SCALE	DESIGNATION
1/4"=1'-0"	PB-14-0004
SURVEY BOOK	SHEETS
	21 of 39
CONTRACT	PROJECT
----	PB-14-0004

Date: May 24, 2017, 12:39pm User Name: tracy
File: S:_2014\14-9003\Bridge\CAD Plans\bnt_dtls.dwg

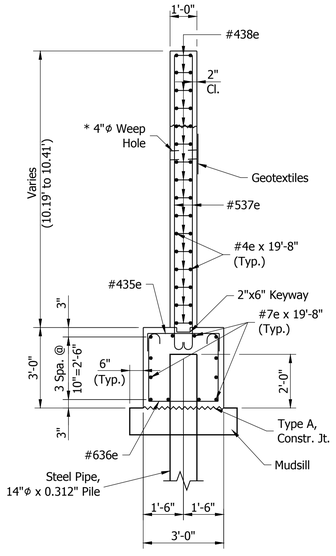


WING A OR C

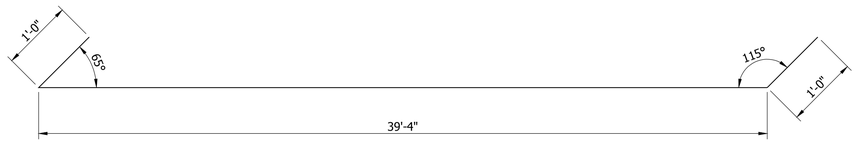


WING B OR D

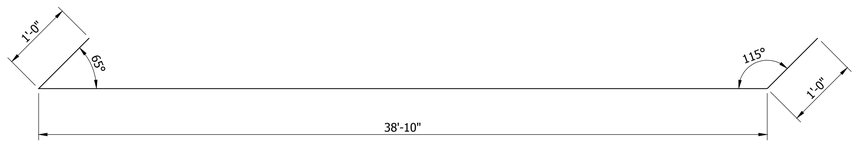
* Weep Holes Shall Be Placed A Min. Of
1'-0" Above Top Of Riprap. Slope to Drain.



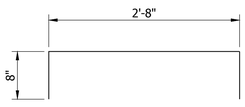
SECTION B-B



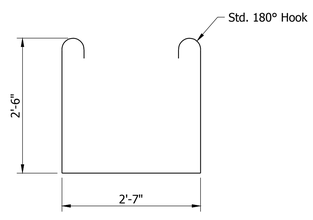
#630e x 41'-4"



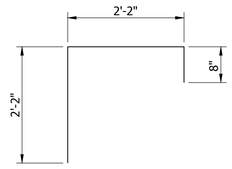
#631e x 40'-10"



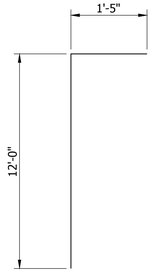
#435e x 4'-0"



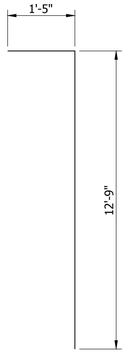
#636e x 8'-11"



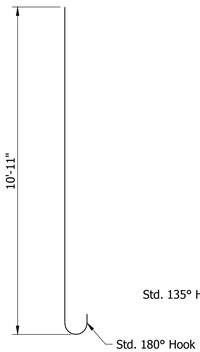
#532e x 5'-0"



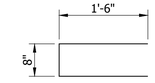
#833e x 13'-5"



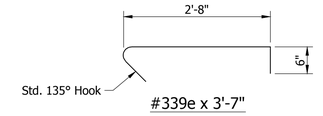
#834e x 14'-2"



#537e x 11'-6"



#438e x 3'-8"



#339e x 3'-7"

WINGWALL ELEVATIONS				
ELEV.	WING A	WING B	WING C	WING D
A	827.00	827.00	827.00	827.00
B	840.25	840.19	840.37	840.41
C	840.31	840.26	840.33	840.37

BILL OF MATERIALS

BENT #1 OR BENT #2

REINFORCING STEEL

SIZE & MARK	NO. OF BARS	LENGTH	WEIGHT (Lbs.)
EPOXY COATED REINFORCING STEEL			
#834e	66	14'-2"	
#833e	66	13'-5"	
TOTAL #8e BARS:			4861
#7e	24	19'-8"	
TOTAL #7e BARS:			965
#636e	40	8'-11"	
#631e	19	40'-10"	
#630e	19	41'-4"	
TOTAL #6e BARS:			2881
#537e	120	11'-6"	
#532e	36	5'-0"	
#5e	72	3'-0"	
TOTAL #5e BARS:			1853
#438e	32	3'-8"	
#435e	40	4'-0"	
#4e	4	39'-4"	
#4e	64	19'-8"	
TOTAL #4e BARS:			1132
#339e	288	3'-7"	
TOTAL #3e BARS:			389
TOTAL EPOXY COATED REINFORCING:			12081

CONCRETE

Concrete, C, Substructure	
Pour A	57.6 yd^3
Pour B	11.1 yd^3
Mudsill	11.7 yd^3
TOTAL	80.4 yd^3

MISCELLANEOUS

Threaded Tie Bar Assembly, Epoxy Coated	36 Ea.
Steel Pipe, 14"ø x 0.312" Pile	
6 Piles @ 31 ft.	186 Lft.
2 Piles @ 28 ft.	56 Lft.
Conical Pile Tips	9 Ea.
Test Pile, Indicator, Restrike	1 Ea.
Test Pile, Indicator, Production	41 Lft.

NOTE: Pour C Concrete Included with Superstructure Bill of Materials, See Sheet 24.

ADAM C. STEURY REGISTERED No. 11400165 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL Adam Steury 04/28/2017
DESIGN ENGINEER DATE

DESIGNED: ACS DRAWN: TAM
CHECKED: JRG CHECKED: ACS

HAMILTON COUNTY
HIGHWAY DEPARTMENT

MISCELLANEOUS END BENT DETAILS

HORIZONTAL SCALE	BRIDGE FILE
3/8"=1'-0"	HAMILTON CO. BR. 306
VERTICAL SCALE	DESIGNATION
3/8"=1'-0"	PB-14-0004
SURVEY BOOK	SHEETS
	22 of 39
CONTRACT	PROJECT
----	PB-14-0004

Date: May 24, 2017, 12:39pm User Name: tracy
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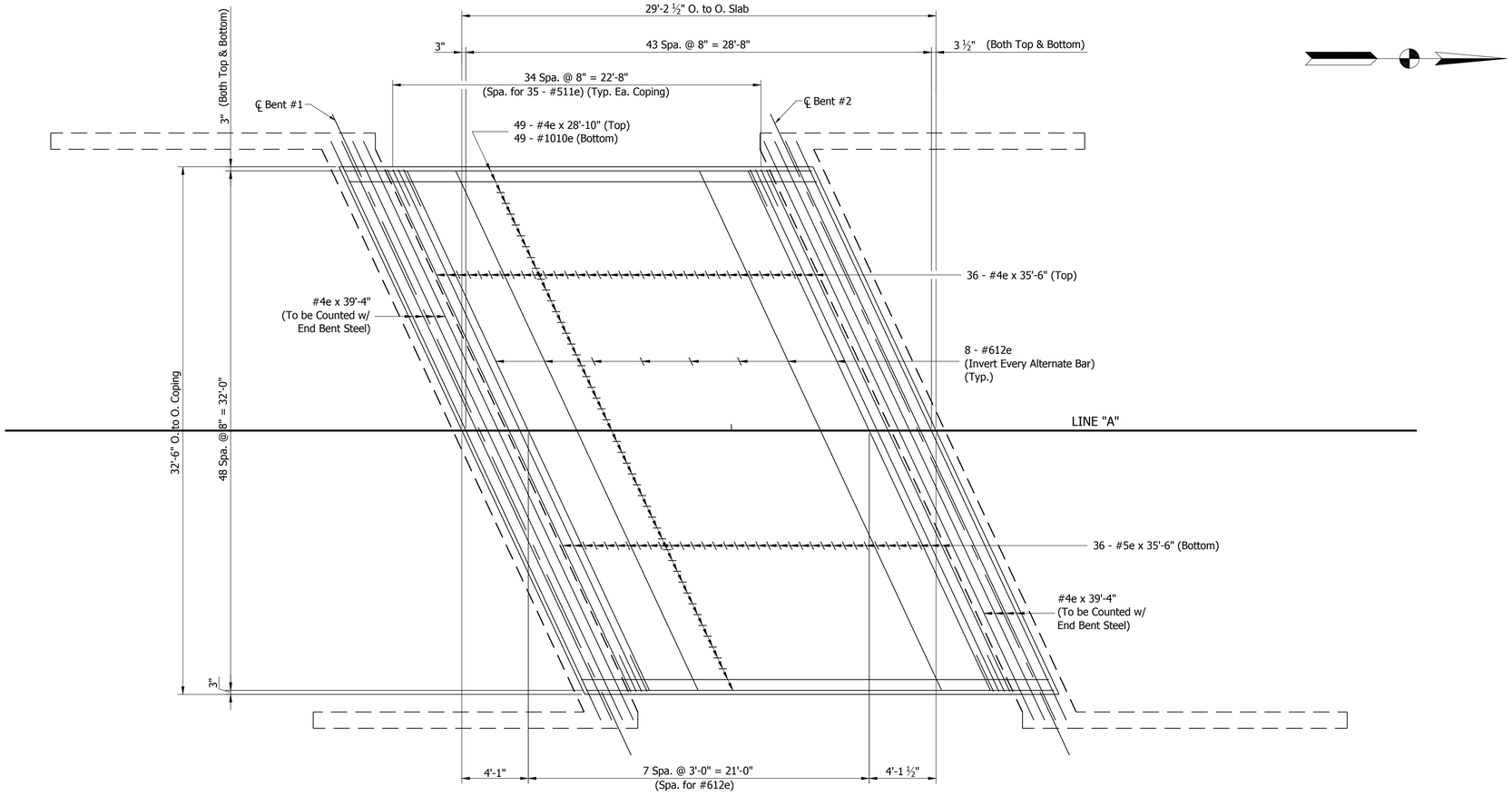
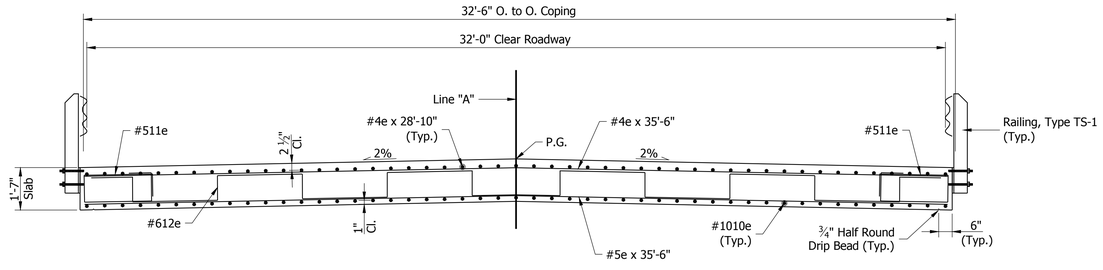
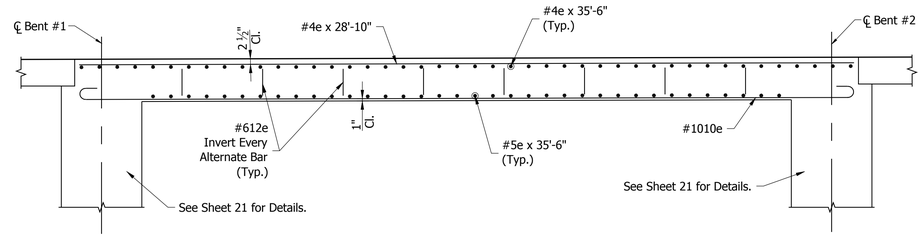


PLAN VIEW



BRIDGE TYPICAL CROSS SECTION
SCALE: 3/16" = 1'-0"



LONGITUDINAL SECTION
SCALE: 3/16" = 1'-0"

Date: May 24, 2017, 12:39pm User Name: tracy
File: S:_2014\214-0000\Bridge\CAD\Plans\super.dwg

ADAM C. STEURY REGISTERED No. 11400165 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL Adam Steury DESIGN ENGINEER 04/28/2017 DATE

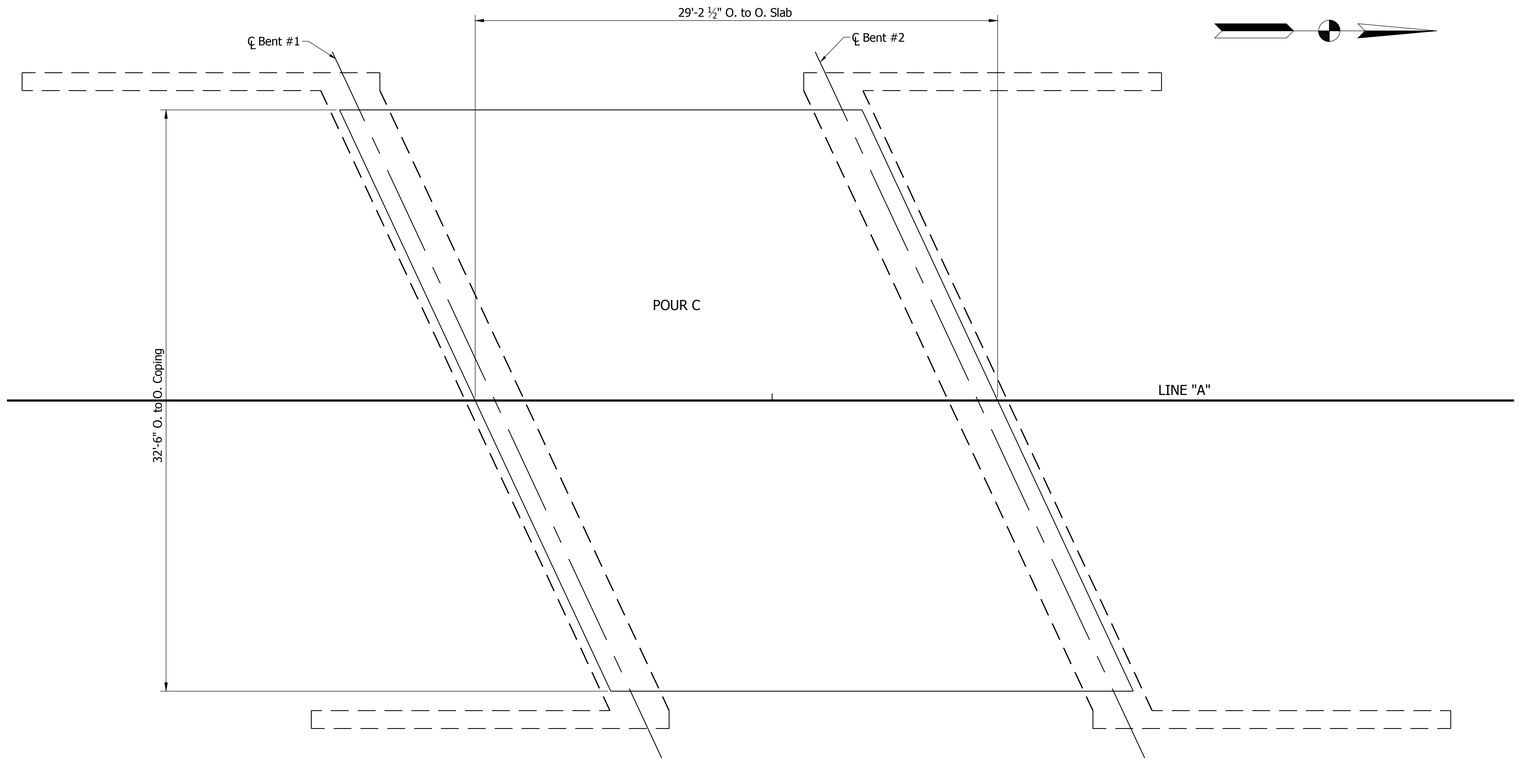
DESIGNED: ACS DRAWN: TAM

CHECKED: MAR CHECKED: ACS

HAMILTON COUNTY
HIGHWAY DEPARTMENT

SUPERSTRUCTURE DETAILS

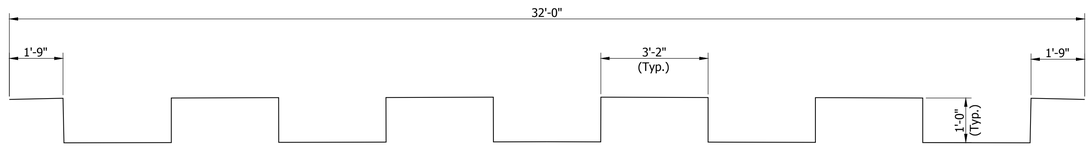
HORIZONTAL SCALE	BRIDGE FILE
1/4"=1'-0"	HAMILTON CO. BR. 306
VERTICAL SCALE	DESIGNATION
1/4"=1'-0"	PB-14-0004
SURVEY BOOK	SHEETS
	23 of 39
CONTRACT	PROJECT
----	PB-14-0004



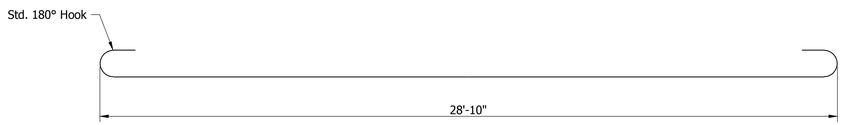
BILL OF MATERIALS

SUPERSTRUCTURE			
REINFORCING STEEL			
SIZE & MARK	NO. OF BARS	LENGTH	WEIGHT (lbs)
EPOXY COATED REINFORCING			
#1010e	49	31'-8"	
TOTAL #10e BARS:			6677
#612e	8	42'-0"	
TOTAL #6e BARS:			505
#511e	70	8'-10"	
#5e	36	35'-6"	
TOTAL #5e BARS:			1978
#4e	36	35'-6"	
#4e	49	28'-10"	
TOTAL #4e BARS:			1798
TOTAL EPOXY COATED REINFORCING			10958
CONCRETE			
Concrete, C, Superstructure			
Pour C			78.0 yd^3
MISCELLANEOUS			
Surface Seal			1050 ft.^{2}

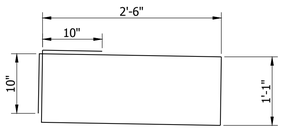
POUR DIAGRAM



#612e x 42'-0"



#1010e x 31'-8"



#511e x 8'-10"

ADAM C. STEURY REGISTERED No. 11400165 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL Adam Steury DESIGN ENGINEER 04/28/2017 DATE

DESIGNED: ACS DRAWN: TAM

CHECKED: MAR CHECKED: ACS

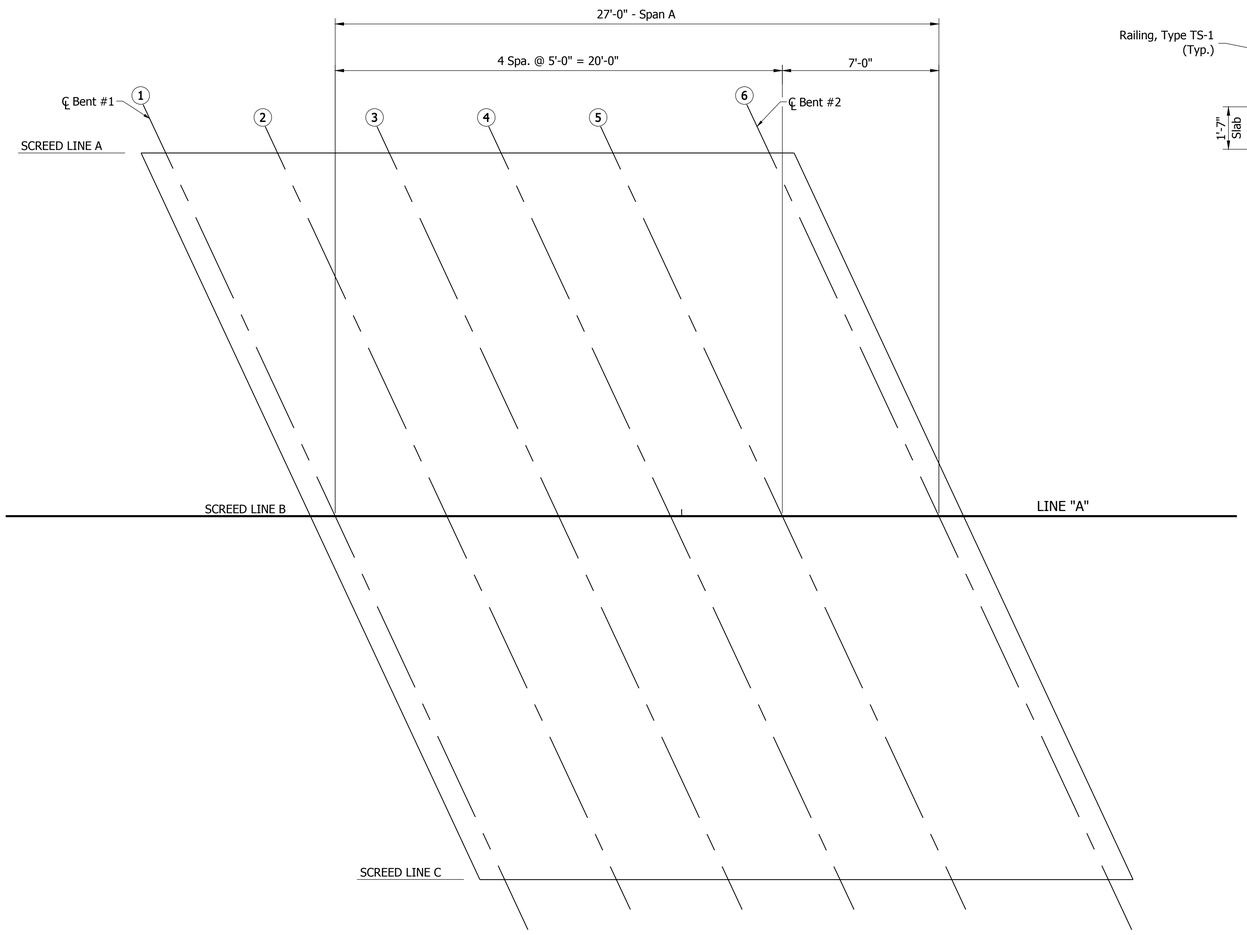
HAMILTON COUNTY HIGHWAY DEPARTMENT

SUPERSTRUCTURE DETAILS

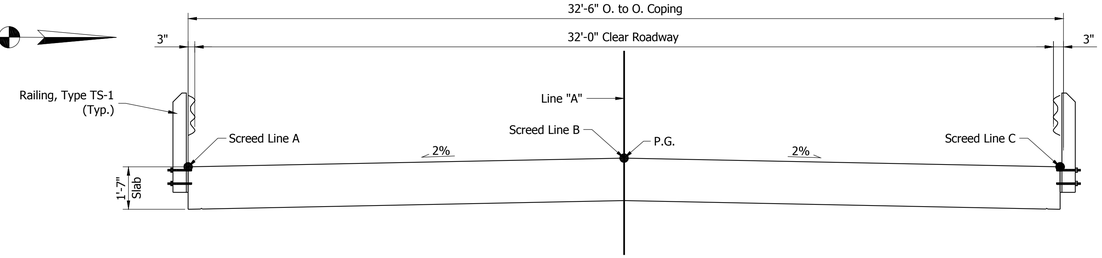
HORIZONTAL SCALE	BRIDGE FILE
1/4"=1'-0"	HAMILTON CO. BR. 306
VERTICAL SCALE	DESIGNATION
1/4"=1'-0"	PB-14-0004
SURVEY BOOK	SHEETS
	24 of 39
CONTRACT	PROJECT
----	PB-14-0004

Date: May 24, 2017, 12:39pm User Name: tracy
File: S:_2014\1214-0030\Bridge\CAD\Plans\super.dwg

			1	2	3	4	5	6
A	Lt. Coping	ELEVATION - TOP OF SCREED	840.30	840.32	840.34	840.35	840.36	840.37
		ELEVATION - TOP OF GIRDER						
		DISTANCE - TOP OF GIRDER TO TOP OF SCREED						
B	P.G.	ELEVATION - TOP OF SCREED	840.65	840.67	840.68	840.70	840.71	840.72
		ELEVATION - TOP OF GIRDER						
		DISTANCE - TOP OF GIRDER TO TOP OF SCREED						
C	Rt. Coping	ELEVATION - TOP OF SCREED	840.34	840.36	840.38	840.39	840.40	840.41
		ELEVATION - TOP OF GIRDER						
		DISTANCE - TOP OF GIRDER TO TOP OF SCREED						

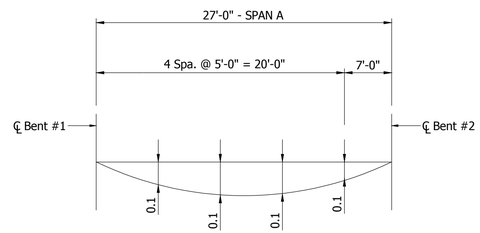


PLAN VIEW



BRIDGE TYPICAL CROSS SECTION

SCALE: 3/16" = 1'-0"



DEAD LOAD DEFLECTION DIAGRAM

NOT TO SCALE

NOTE: These Deflections Include Dead Load Deflections. This Net Downward or Upward Deflection is taken into Account in the Table of Screed Elevations. Deflections are in Inches.

ADAM C. STEURY REGISTERED No. 11400165 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL Adam Steury 04/28/2017
DESIGN ENGINEER DATE

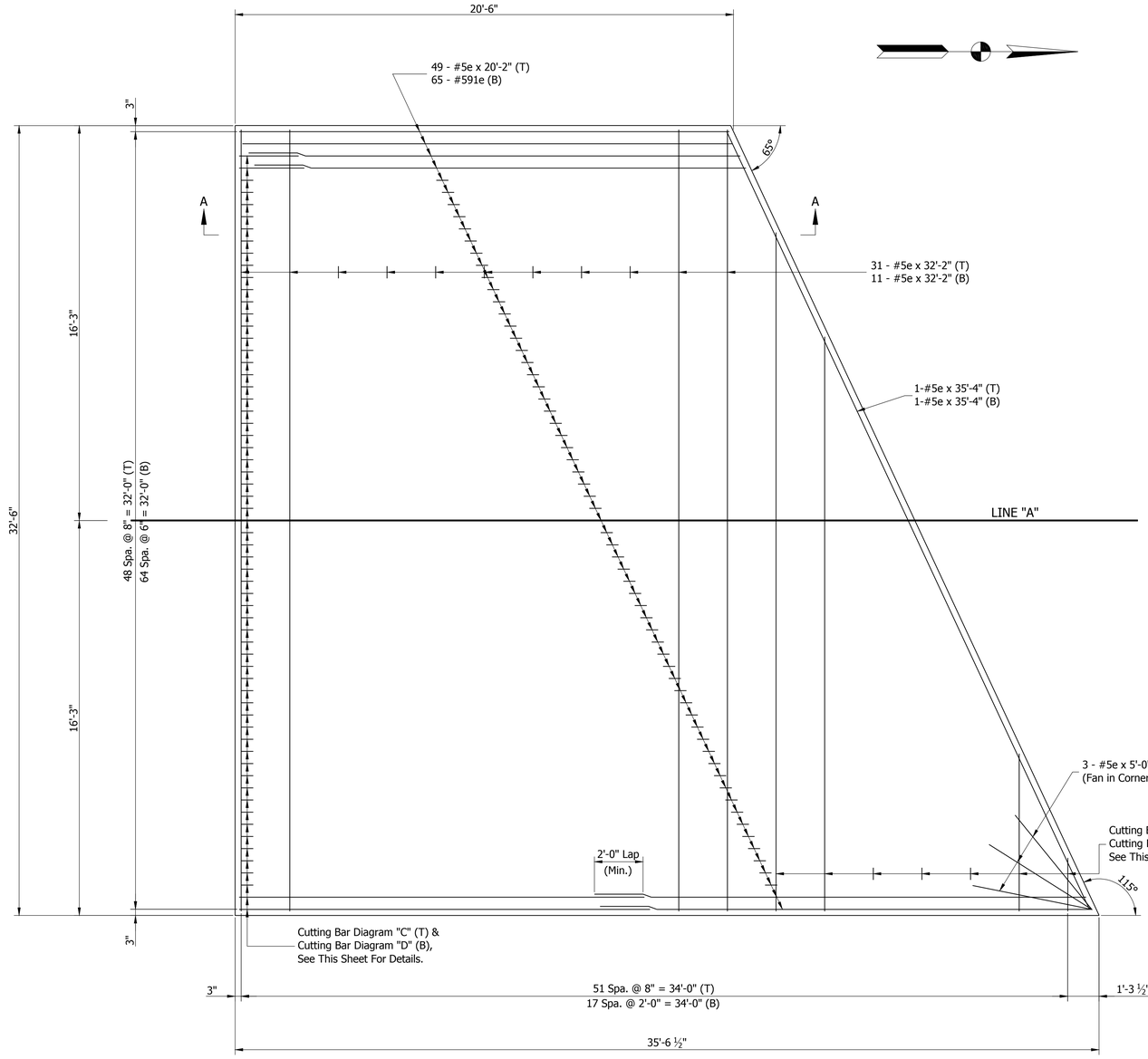
DESIGNED: ACS DRAWN: TAM
CHECKED: MAR CHECKED: ACS

HAMILTON COUNTY
HIGHWAY DEPARTMENT

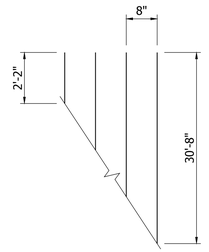
SCREED SHEET

HORIZONTAL SCALE	BRIDGE FILE
5/16"=1'-0"	HAMILTON CO. BR. 306
VERTICAL SCALE	DESIGNATION
5/16"=1'-0"	PB-14-0004
SURVEY BOOK	SHEETS
	25 of 39
CONTRACT	PROJECT
----	PB-14-0004

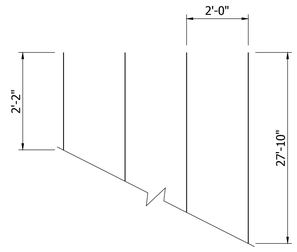
Date: May 24, 2017, 12:39pm User Name: tracy
File: S:_2014\14-0080\Bridge\Cad\Plans\SCREEDS.dwg



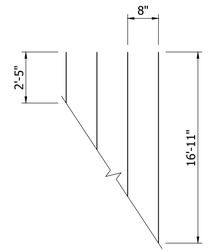
SOUTH R.C. BRIDGE APPROACH
(NORTH R.C. BRIDGE APPROACH SIMILAR)
(BOTTOM REINFORCEMENT SHOWN)



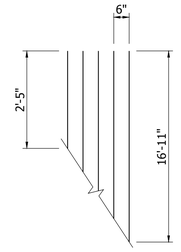
CUTTING BAR DIAGRAM "A"
21 - #5e x 16'-5" (T)
(Varying in Length)



CUTTING BAR DIAGRAM "B"
7 - #5e x 15'-0" (B)
(Varying in Length)

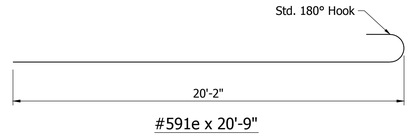


CUTTING BAR DIAGRAM "C"
47 - #5e x 9'-8" (T)
(Varying in Length)

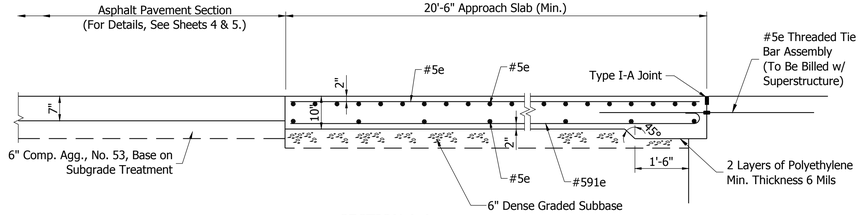


CUTTING BAR DIAGRAM "D"
63 - #5e x 9'-8" (B)
(Varying in Length)

BILL OF MATERIALS			
R.C. BRIDGE APPROACH (2 REQ'D)			
REINFORCING STEEL			
SIZE & MARK	NO. OF BARS	LENGTH	WEIGHT (Lbs.)
EPOXY COATED REINFORCING STEEL			
#591e	65	20'-9"	
#5e	2	35'-4"	
#5e	42	32'-2"	
#5e	49	20'-2"	
#5e	21	16'-5"	
#5e	7	15'-0"	
#5e	110	9'-8"	
#5e	3	5'-0"	
TOTAL #5e BARS:			5514
TOTAL EPOXY COATED REINFORCING:			5514
CONCRETE			
Reinf. Conc. Bridge Appr., 10"			101.2 yd^2
MISCELLANEOUS			
Dense Graded Subbase			16.6 yd^3
Surface Seal			910 ft^2



#591e x 20'-9"



SECTION A-A
NOT TO SCALE

For Type I-A Joint See Std. Dwg. 609-BRJT-01.

NOTES:

T - Denotes Top Mat of Reinforcing Steel
B - Denotes Bottom Mat of Reinforcing Steel

ADAM C. STEURY
REGISTERED
No. 11400165
STATE OF
INDIANA
PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL — DESIGN ENGINEER — 04/28/2017 DATE

DESIGNED: TAM | DRAWN: TAM

CHECKED: ACS | CHECKED: ACS

HAMILTON COUNTY
HIGHWAY DEPARTMENT

R.C. BRIDGE APPROACH

HORIZONTAL SCALE	BRIDGE FILE
3/16"=1'-0"	HAMILTON CO. BR. 306
VERTICAL SCALE	DESIGNATION
3/16"=1'-0"	PB-14-0004
SURVEY BOOK	SHEETS
	26 of 39
CONTRACT	PROJECT
----	PB-14-0004

Date: May 24, 2017, 12:40pm User Name: tracy
File: S:_2014\121400\Bridge\CAD\Plans\RCAPPR.dwg

SUMMARY OF BRIDGE QUANTITIES

ITEM	CONCRETE					RAILING, CONCRETE, PF-2	REINF. BARS	REINF. BARS, EPOXY COATED	RAILING, TS-1	GUARDRAIL TRANSITION, TGS-1	THREADED TIE BAR ASSEMBLY, E.C.	REINF. CONC. BRIDGE APPROACH (10 IN.)	DENSE GRADED SUBBASE	REVETMENT RIPRAP	CLASS 1 RIPRAP	PIPE, END BENT DRAIN, 6 IN.	GEOTEXTILE	STRUCTURE BACKFILL, TYPE 3	PILES								EXCAVATION			SURFACE SEAL**
	CLASS C		CLASS A	CLASS B															STEEL PIPE, 14"ϕ x 0.312		DYNAMIC PILE LOAD TEST	TEST PILE, INDICATOR, PRODUCTION	TEST PILE, INDICATOR, RESTRIKE	CONICAL PILE TIPS	STEEL H, REINF. CONC. ENCASED (HP 12x53)		FOUNDATION, UNCLASSIFIED	COMMON	DRY	
	SUPERSTR	SUBSTR	SUBSTR	ABOVE FTG.	IN FTG.																								
	CYS	CYS	CYS	CYS	CYS	CYS	LBS	LBS	LFT	EACH	EACH	SYS	CYS	TON	TON	EACH	SYS	CYS	NO.	LFT	EACH	LFT	EACH	EACH	NO.	LFT	CYS	CYS	CYS	SFT
BENT #1		80.4						12081			36			40.5	223.5		213	106	8	242		41	1	9			129.6	135.5		
BENT #2		80.4						12081			36			40.5	223.5		213	107	8	242		41	1	9			133.8	135.5		
SUPERSTRUCTURE	78							10958	44	4																				1050
R.C. BRIDGE APPROACH								11028				202.4	33.2																	1820
TOTALS	78	160.8						46148	44	4	72	202.4	33.2	81	447		426	213	16	484		82	2	18			263.4	271		2870

** ESTIMATED QUANTITY
LUMP SUM ITEM

Date: May 24, 2017, 12:40pm User Name: tracy
File: S:_2014\1214-6030\Bridge\CADD\Plans\summary.dwg

ADAM C. STEURY REGISTERED No. 11400165 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL _____ 04/28/2017
DESIGN ENGINEER DATE

DESIGNED: VCH | DRAWN: VCH
CHECKED: ACS | CHECKED: ACS

INDIANA
DEPARTMENT OF TRANSPORTATION

BRIDGE SUMMARY OF QUANTITIES

HORIZONTAL SCALE	BRIDGE FILE
NONE	HAMILTON CO. BR. 306
VERTICAL SCALE	DESIGNATION
NONE	PB-14-0004
SURVEY BOOK	SHEETS
	27 of 39
CONTRACT	PROJECT
----	PB-14-0004

GUARDRAIL SUMMARY TABLE

LOCATION						W-BEAM GUARDRAIL LENGTH							GUARDRAIL FLARE RATE	GUARDRAIL TRANSITION TYPE TGS-1	GUARDRAIL TRANSITION TYPE ___		GUARDRAIL END TREATMENT TYPE OS		CURVED W-BEAM GUARDRAIL SYSTEM				GUARDRAIL REMOVE	GUARDRAIL RESET	IMPACT ATTENUATOR TYPE ___	IMPACT ATTENUATOR TYPE ___	REMARKS
FROM STATION	TO STATION	LEFT	MEDIAN LEFT	MEDIAN RIGHT	RIGHT	STANDARD POST AT 6 FT 3 IN. SPA.	STANDARD POST AT 3 FT 1.5 IN. SPA.	DOUBLE FACED AT 6 FT 3 IN. SPA.	DOUBLE FACED AT 3 FT 1.5 IN. SPA.		SHOP CURVED AT ___ FT. SPA.	NESTING GUARDRAIL							TERMINAL SYSTEM		CONNECTOR SYSTEM						
						LFT	LFT	LFT	LFT	LFT	LFT	EACH		EACH	EACH		EACH		TYPE	EACH	TYPE	EACH	LFT	LFT	EACH	EACH	
58+98.29	59+10.79	X				12.50								1			1										
58+38.21	59+25.71				X	87.50								1			1										
59+70.29	60+07.79	X				37.50								1					4	1							
59+85.21	61+91.46				X	206.25								1			1										
TOTALS						344.0								4			3			1							

SHEET SIGN & POST SUMMARY

SIGN									POST								
									U CHANNEL				SQUARE				
PLAN SHEET NO. / LINE	SIGN LOCATION (STA.)	SIGN CODE	SIGN SIZE (IN x IN)			GROUND - MOUNTED SIGN AREA (ft2)			MOUNTED ON PANEL SIGN, AREA (ft2)	POST LENGTH		POST LENGTH		2" X 2" - 12 GA. (TYPE 2)			2 1/4" X 2 1/4" - 12 GA. (TYPE 1)	
														REINFORCED ANCHOR			REINFORCED ANCHOR	
						0.080"	0.100"	0.125"	0.080"	1	2	TYPE "A"	TYPE "B"	POST LENGTH (FT.)			POST LENGTH (FT.)	
										FT.		FT.	FT.	1	2	TOTAL	1	TOTAL
Line "A"	58+00.00	W8-13	36	x	36		9.00										11.0	11.0
				x														
Line "A"	61+00.00	W8-13	36	x	36		9.00										11.0	11.0
				x														
				x														
				x														
				x														
				x														
				x														
				x														
				x														
Total							18.00											22.00

PAVED SIDE DITCH, RIPRAP DITCH, AND SODDING SUMMARY TABLE

LOCATION					PAVED SIDE DITCH								RIPRAP DITCH			EROSION CONTROL BLANKET						TURF REINFORCEMENT MAT
								TOTAL EQUIVALENT PAY LENGTHS														
								TYPE														
FROM STATION	TO STATION	LEFT	MEDIAN	RIGHT	ACTUAL LENGTH	CUT OFF WALLS (8' EQUIVAL. LENGTH EACH)	LUGS (8' EQUIVAL. LENGTH EACH)						REVETMENT RIPRAP	UNIFORM RIPRAP	GEOTEXTILES	FOR PAVED SIDE DITCHES	FOR DITCHES	FOR MEDIAN	FOR SHOULDER BREAK	SODDING AT BRIDGE CONE	TOTAL SODDING	
					LFT	EACH	EACH	LFT	LFT	LFT	LFT	LFT	TONS	TONS	SYS	SYS	SYS	SYS	SYS	SYS	SYS	SYS
51+00.00	56+10.00			X	510.00												453					
56+10.00	59+48.00	X			338.00												451					
56+10.00	57+33.50			X	123.50												110					
59+48.00	65+50.00	X			602.00												535					
62+40.00	64+00.00			X	160.00												142					
64+50.00	65+50.00			X	100.00												89					
64+00.00	64+50.00			X	50.00																	28
64+50.00	65+50.00			X	100.00																	
TOTAL																	1780					28

R/W MARKER TABLE

Line	Station	Offset	
A	51+25.00	45.00	LT
A	53+35.00	45.00	LT
A	55+80.00	90.00	LT
A	59+76.00	90.00	LT
A	62+35.00	45.00	LT
A	65+20.00	45.00	LT
A	52+15.00	60.00	RT
A	55+25.00	60.00	RT
A	55+50.00	65.00	RT
A	56+75.00	65.00	RT
A	57+00.00	60.00	RT
A	64+00.00	60.00	RT

MAILBOX APPROACHES

LT./RT.	C/L BOX STATION	DESCRIPTION	WIDTH, W(FT)	ASSEMBLY REQ'D		
				SINGLE	DOUBLE	
LT	53+86			X		
LT	57+52			X		
LT	63+10			X		
		TOTAL		3		

SURVEY MONUMENT TABLE

STATION	LINE	OFFSET	SECTION CORNER	TYPE			
				A	B	C	D
51+50.00	A	0.0			X		
60+53.59	A	0.0	X				
64+00.00	A	0.0			X		
TOTALS			1		2		

BRIAN K. ARTERBERY REGISTERED No. 19800103 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER — 04/28/2017 DATE

DESIGNED: BSS DRAWN: DJG

CHECKED: BKA CHECKED: BSS

HAMILTON COUNTY HIGHWAY DEPARTMENT

ROAD SUMMARY

HORIZONTAL SCALE	BRIDGE FILE
3/8"=1'-0"	HAMILTON CO. BR. 306
VERTICAL SCALE	DESIGNATION
N/A	PB-14-0004
SURVEY BOOK	SHEETS
	28 of 39
CONTRACT	PROJECT
	PB-14-0004

Date: May 25, 2017, 9:58am User Name: bstutzman
File: H:_2014\14-0030\Road\GA01Tables\Roadway Tables.dwg

PAVEMENT QUANTITIES AND APPROACH TABLE

LOCATION	DESCRIPTION (APPROACH TYPE OR CLASS)	WIDTH	LENGTH	RADII	DISTANCE BEYOND R/W LINE	SURFACE BEYOND R/W LINE			GRADE				EXCAVATION		CLEAR ZONE AT DRIVE	HMA FOR APPROACHES, TYPE B				HMA MATERIALS						SUBGRADE TREATMENT, TYPE I	SUBGRADE TREATMENT, TYPE IC	SUBGRADE TREATMENT, TYPE III	HMA MATERIAL FOR:				COMPACTED AGGREGATE FOR BASE NO. 53				COMPACTED AGGREGATE NO. 53		REM
						COMPACTED AGGREGATE, NO. 53	HMA	CONCRETE								HMA FOR APPROACHES, TYPE B				QC/QA HMA, 2, 64, SURFACE, 9.5mm		QC/QA HMA, 2, 64, INTERMEDIATE, 19mm		QC/QA HMA, 2, 64, BASE, 25mm					JOINT SEALANT, SURFACE	JOINT SEALANT, INTERMEDIATE	LIQUID ASPHALT SEALANT	TACK COAT	DEPTH				VARIABLE DEPTH		
									1	2	3	4	CUT	FILL		LBS. PER SYD.				LBS. PER SYD.												6"					
		FT	FT	FT	FT	SYS	SYS	SYS	%	%	%	%	CYS	CYS	FT	SYS	165 TON		385 TON	165 TON		275 TON		330 TON	SYS	SYS	SYS	LFT	LFT	LFT	TON	SYS	TON		TON	SYS	TON	
51+00 to 51+50	Mainline	Varies	50.0																	10.3		17.1		20.5		124.4		50.0	50.0	50.0	0.06	124.4	41.4					
51+50 to 52+50	Mainline	24	100.0																	22.0		36.7		44.0		266.7		100.0	100.0	100.0	0.13	266.7	88.8					
52+50 to 57+88.21	Mainline	24	538.2																	118.4		197.3		236.8	1435.2			538.2	538.2	538.2	0.72	1435.2	477.9					
57+88.21 to 58+48.29	Mainline	28	60.1																	15.4		25.7		30.8	186.9			60.1	60.1	60.1	0.09	186.9	62.2					
58+48.29 to 59+05.44	Mainline	32	57.2																	16.8		27.9		33.5	203.2			57.2	57.2	57.2	0.10	203.2	67.7					
59+90.56 to 60+07.79	Mainline	32	17.2																	5.1		8.4		10.1	61.2			17.2	17.2	17.2	0.03	61.2	20.4					
60+07.79 to 62+41.46	Mainline	28	233.7																	60.0		100.0		120.0	727.1			233.7	233.7	233.7	0.36	727.1	242.1					
62+41.46 to 62+50.00	Mainline	24	8.5																	1.9		3.1		3.8	22.8			8.5	8.5	8.5	0.01	22.8	7.6					
62+50 to 64+00	Mainline	24	150.0																	33.0		55.0		66.0		400.0		150.0	150.0	150.0	0.20	400.0	133.2					
64+00 to 65+50	Mainline	Varies	150.0																	29.8		49.7		59.7		362.5		150.0	150.0	150.0	0.18	361.7	120.4					
51+00 to 51+50	Mainline	Varies	50.0																							33.3										33.3	18.1	
51+50 to 52+50	Mainline	8	100.0																							88.9										88.9	48.2	
52+50 to 57+88.21	Mainline	8	538.2																						478.4										478.4	259.1	
57+88.21 to 58+48.29	Mainline	7.5	60.1																						50.1										50.1	27.2	
58+48.29 to 59+05.44	Mainline	7	57.2																						44.5										44.5	24.1	
59+90.56 to 60+07.79	Mainline	7	17.2																						13.4										13.4	7.3	
60+07.79 to 62+41.46	Mainline	7.5	233.7																						194.8										194.8	105.5	
62+41.46 to 62+50.00	Mainline	8	8.5																						7.6										7.6	4.2	
62+50 to 64+00	Mainline	8	150.0																							133.3										133.3	72.2	
64+00 to 65+50	Mainline	Varies	150.0																							100.0										100.0	54.2	
54+11	Class II Drive	11	48	25/15												78.9	7.0		15.0								78.9											
57+41	Class II Drive	12	49.1	25/15	20.9	7.1										84.4	7.0		16.0								84.4										7.1	
60+39	Class V Drive	24	53	25/15												150.9																					36.7	
63+25	Class II Drive (Mod.)	12	33.2	15/15	30.8	9.1										56.3	5.0		11.0								56.3										9.1	
Additional aggregate for extending to slope every 100'																																				3.6	
Around guardrail end sections																																				22.4	
TOTAL																	19		42	313		522		626	3426	1510	220	1365	1365	1365	2	1262			699		

Date: May 25, 2017, 9:58am User Name: bdutzman
File: H:_2014\1214-0830\Road\Cad\Tables\Roadway Tables.dwg

BRIAN K. ARTERBERRY REGISTERED No. 19800103 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL B K Arterberry 04/28/2017
DESIGN ENGINEER DATE

DESIGNED: CCW DRAWN: DJG

CHECKED: BKA CHECKED: BSS

HAMILTON COUNTY
HIGHWAY DEPARTMENT

PAVEMENT QUANTITIES
AND APPROACH TABLE

HORIZONTAL SCALE	BRIDGE FILE
3/8"=1'-0"	HAMILTON CO. BR. 306
VERTICAL SCALE	DESIGNATION
N/A	PB-14-0004
SURVEY BOOK	SHEETS
	29 of 39
CONTRACT	PROJECT
	PB-14-0004

STRUCTURE DATA TABLE

STRUCTURE NUMBER	LOCATION					SIZE	DESCRIPTION		LENGTH	VIDEO INSPECTION LENGTH	SKEW	FLOW LINE			SERVICE LIFE	SITE DESIGNATION	pH	BACKFILL METHOD	STRUCTURE BACKFILL	TYPE	FLOWABLE BACKFILL	TYPE	GEOTEXTILES	REVETMENT RIPRAP	SCOUR PROTECTION				CONCRETE, CLASS A, FOR STR.	VIDEO INSPECTION	PIPE END SECTION	GRATED BOX END SECTION			SAFETY METAL END SECTION			CONNECT TO STR.	REMARKS
	STATION	LEFT	RIGHT	CROSS	OFFSET		PIPE TYPE	MANHOLE, INLET, CATCH BASIN, OR SPECIALTY STRUCTURE AND TYPE				COVER	UP STREAM	DOWN STREAM											SUMP DEPTH	GEOTEXTILE	RIPRAP					TYPE	SLOPE	EA.	TYPE	SLOPE	EA.		
					FT	IN.			LFT	LFT		LFT	ELEV.	ELEV.	YRS				CYS		CYS		SYS	TON	IN.	SYS	TYPE	TONS	CYS	LFT	EA									
11	54+11.00		X		36.7	15	3	Culvert	30.0			4.1	832.17	831.71	75		7		2.7	2											2							
12	56+10.00			X	0.0	60	1	Culvert	62.0			5.1	828.58	827.86	75		7		144.4	1			125.9	94.4														2 Concrete Anchors
14	60+39.00	X			49.6	15	3	Culvert	41.0			6.7	832.91	831.58	75		7		4.7	2											2							
15	63+50.00	X			37.0	15	3	Inlet Type A-2	41.0			4.7	838.23	837.82	75		7		4.1	2											1							
	Total																						125.9	94.4						5									

PIPE MATERIAL TABLE

		STRUCTURE NUMBER																							
		11	**12**	**14**	**15**																				
	PIPE TYPE / SHAPE	3 / Circular	1 / Circular	3 / Circular	3 / Circular																				
	SMOOTH PIPE SIZE	15	60	15	15																				
	CORRUGATED PIPE SIZE	15	60	15	15																				
	RCP/RCHEP (S) CLASS	II	II	II	II																				
	RCP/RCHEP (S) D 0.01 RATING	1000	1000	1000	1000																				
	NON-REINFORCED CONCRETE PIPE, CLASS 3 (S)	X		X	X																				
	CORRUGATED PE PIPE, TYPE S (S)*	X		X	X																				
	RIBBED PE PIPE (S)*																								
	SMOOTH WALL PE PIPE (S)* / MAXIMUM DR	X / 26		X / 26	X / 26																				
	PROFILE WALL PVC PIPE (S)	X		X	X																				
	SMOOTH WALL PVC PIPE (S)*	X		X	X																				
	VITRIFIED CLAY PIPE, EXTRA STRENGTH (S)	X		X	X																				
CORRUGATED STEEL PIPE / PIPE-ARCH	FULLY BIT. PAVED & LINED (S) CORR. PROFILE																								
	FULLY BIT. PAVED & LINED (S) THICKNESS																								
	ZINC COATED (C) CORR. PROFILE		2 2/3" x 1/2"																						
	ZINC COATED (C) THICKNESS		0.168																						
	ZINC COATED W/ BPI (C) CORR. PROFILE	2 2/3" x 1/2"	2 2/3" x 1/2"	2 2/3" x 1/2"	2 2/3" x 1/2"																				
	ZINC COATED W/ BPI (C) THICKNESS	0.109	0.109	0.109	0.109																				
	ALUM. COATED TYPE 2 (C) CORR. PROFILE	2 2/3" x 1/2"	2 2/3" x 1/2"	2 2/3" x 1/2"	2 2/3" x 1/2"																				
	ALUM. COATED TYPE 2 (C) THICKNESS	0.109	0.109	0.109	0.109																				
	ALUM. COATED TYPE 2 W/ BPI (C) CORR. PROFILE																								
	ALUM. COATED TYPE 2 W/ BPI (C) THICKNESS																								
	POLYMER PRECOATED GALVANIZED (C) CORR. PROFILE	2 2/3" x 1/2"	2 2/3" x 1/2"	2 2/3" x 1/2"	2 2/3" x 1/2"																				
	POLYMER PRECOATED GALVANIZED (C) THICKNESS	0.109	0.109	0.109	0.109																				
	POLYMER PRECOATED GALVANIZED W/ BPI (C) CORR. PROFILE																								
	POLYMER PRECOATED GALVANIZED W/ BPI (C) THICKNESS																								
	POLYMER PRECOATED GALVANIZED CORRUGATED STEEL PIPE TYPE 1A (S) CORR. PROFILE		2 2/3" x 1/2"																						
	POLYMER PRECOATED GALVANIZED CORRUGATED STEEL PIPE TYPE 1A (S) THICKNESS		0.109																						
	FIBER BONDED BITUMINOUS COATED (C) CORR. PROFILE																								
	FIBER BONDED BITUMINOUS COATED (C) THICKNESS																								
	FIBER BONDED BITUMINOUS COATED W/ BPI (C) CORR. PROFILE																								
	FIBER BONDED BITUMINOUS COATED W/ BPI (C) THICKNESS																								
	CORRUGATED ALUM. ALLOY PIPE (C) CORR. PROFILE	2 2/3" x 1/2"	2 2/3" x 1/2"	2 2/3" x 1/2"	2 2/3" x 1/2"																				
	CORRUGATED ALUM. ALLOY PIPE (C) THICKNESS	0.06	0.135	0.06	0.06																				
	CORRUGATED ALUM. ALLOY PIPE W/ BPI (C) CORR. PROFILE																								
	CORRUGATED ALUM. ALLOY PIPE W/ BPI (C) THICKNESS																								
	STR. PLATE ALUMINUM ALLOY PLATE (C) CORR. PROFILE																								
	STR. PLATE ALUMINUM ALLOY PLATE (C) THICKNESS		9" x 2 1/2"																						
	STR. PLATE ALUMINUM ALLOY PLATE W/ CFP (C) CORR. PROFILE		0.1																						
	STR. PLATE ALUMINUM ALLOY PLATE W/ CFP (C) THICKNESS																								
	STR. PLATE STEEL PIPE (C) CORR. PROFILE		6" x 2"																						
	STR. PLATE STEEL PIPE (C) THICKNESS **		0.111																						
	STR. PLATE STEEL PIPE W/ CFP (C) CORR. PROFILE																								
	STR. PLATE STEEL PIPE W/ CFP (C) THICKNESS **																								

LEGEND

RCP-	Reinforced Concrete Pipe
RCHEP-	Reinforced Concrete Horizontal Elliptical Pipe
PE-	Polyethylene
DR-	Dimension Ratio
PVC-	Polyvinyl Chloride
BIT-	Bituminous
CORR-	Corrugation
BPI-	Bituminous Paved Invert
ALUM-	Aluminum
STR-	Structural
CFP-	Concrete Field Paving
CIR-	Circular Pipe
DEF-	Deformed Pipe
(S)-	Smooth Pipe Material
(C)-	Corrugated Pipe Material
OK-	Acceptable for Use
(LS)-	Lock Seam Pipe Required
*-	Refer to Standard Drawings 715-PHCL-18 and -19 for nominal diameter appropriate for pay item diameter.
**-	Tabulated thickness refers to top and side plates. Bottom plates shall be of next greater available thickness.

BRIAN K. ARTERBERRY REGISTERED No. 19800103 STATE OF INDIANA PROFESSIONAL ENGINEER

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER 04/28/2017 DATE

DESIGNED: CCW DRAWN: DJG

CHECKED: BKA CHECKED: BSS

HAMILTON COUNTY HIGHWAY DEPARTMENT

STRUCTURE DATA TABLE AND PIPE MATERIAL TABLE

HORIZONTAL SCALE	BRIDGE FILE
3/8"=1'-0"	HAMILTON CO. BR. 306
VERTICAL SCALE	DESIGNATION
N/A	PB-14-0004
SURVEY BOOK	SHEETS
	30 of 39
CONTRACT	PROJECT
	PB-14-0004

Date: May 25, 2017, 9:58pm User Name: kstutzman
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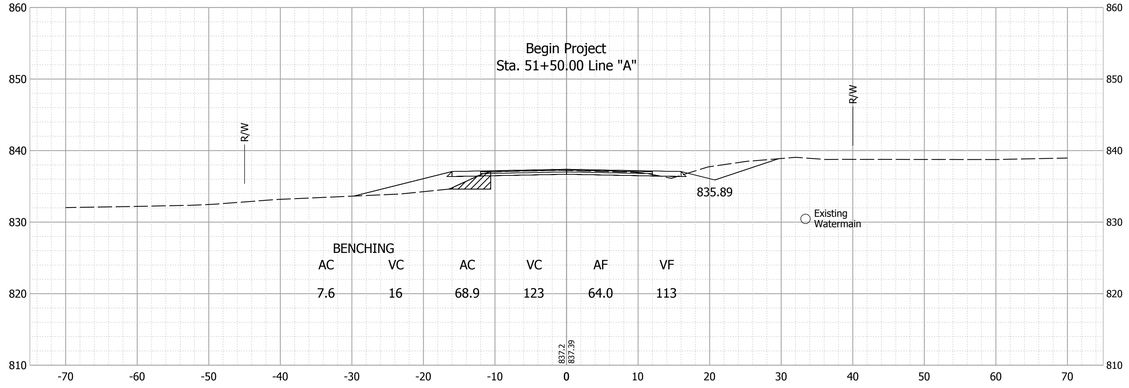

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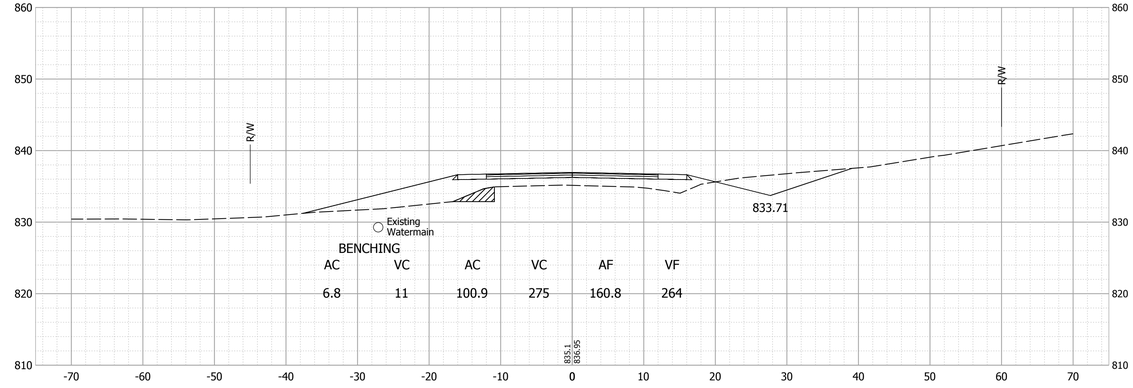

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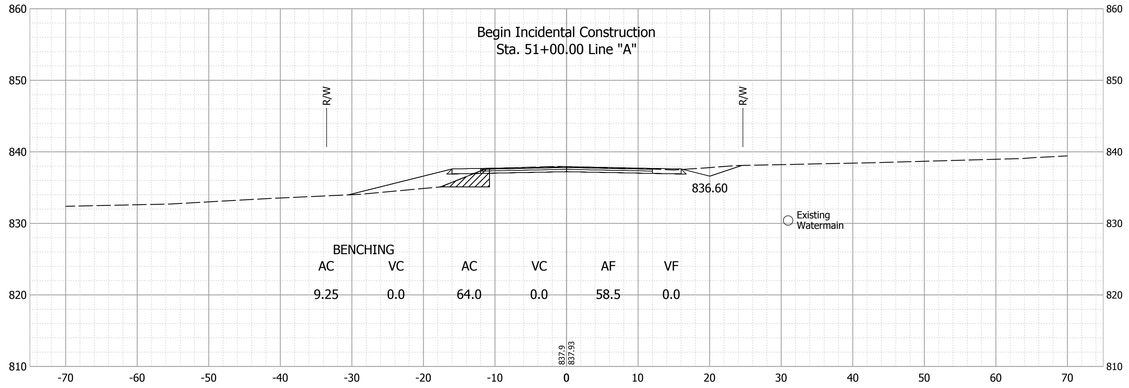

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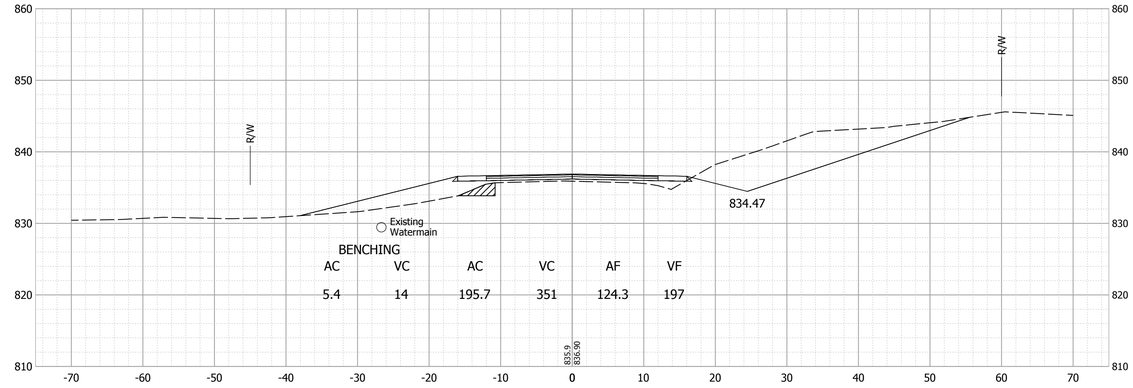

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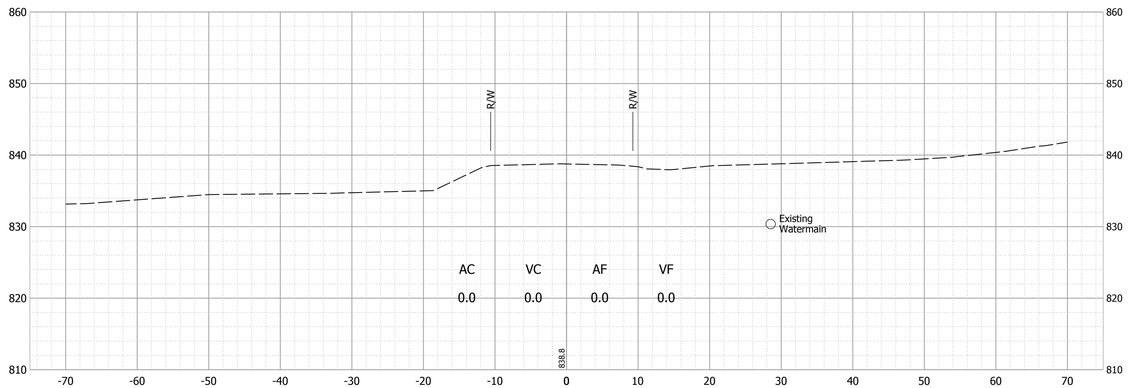

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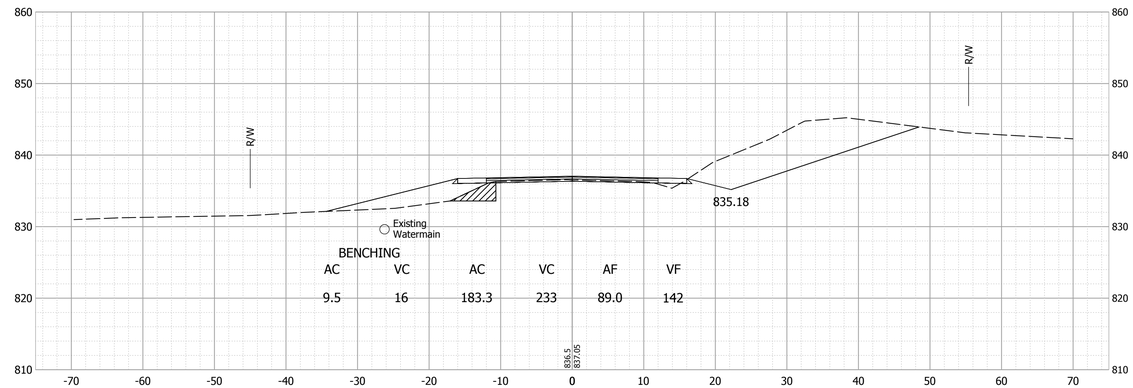

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RECOMMENDED FOR APPROVAL _____ 04/28/2017
DESIGN ENGINEER DATE

DESIGNED: MDV DRAWN: MDV

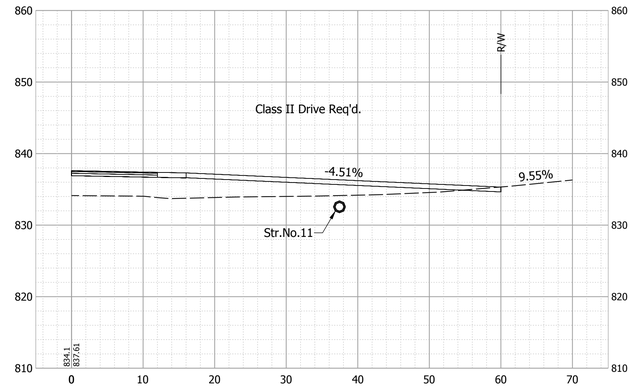
CHECKED: BKA CHECKED: BSS

HAMILTON COUNTY
HIGHWAY DEPARTMENT

CROSS SECTIONS

HORIZONTAL SCALE	BRIDGE FILE
1"=10'	HAMILTON CO. BR. 306
VERTICAL SCALE	DESIGNATION
1"=10'	PB-14-0004
SURVEY BOOK	SHEETS
	31 of 39
CONTRACT	PROJECT
----	PB-14-0004

54+11



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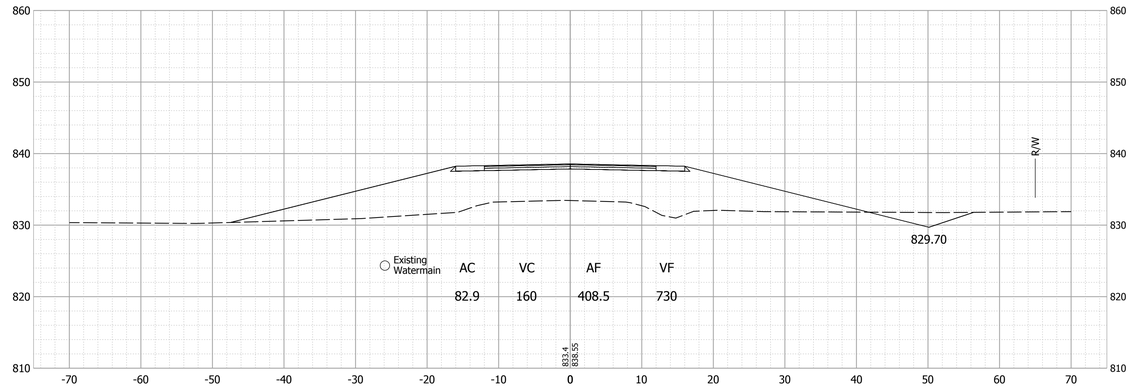

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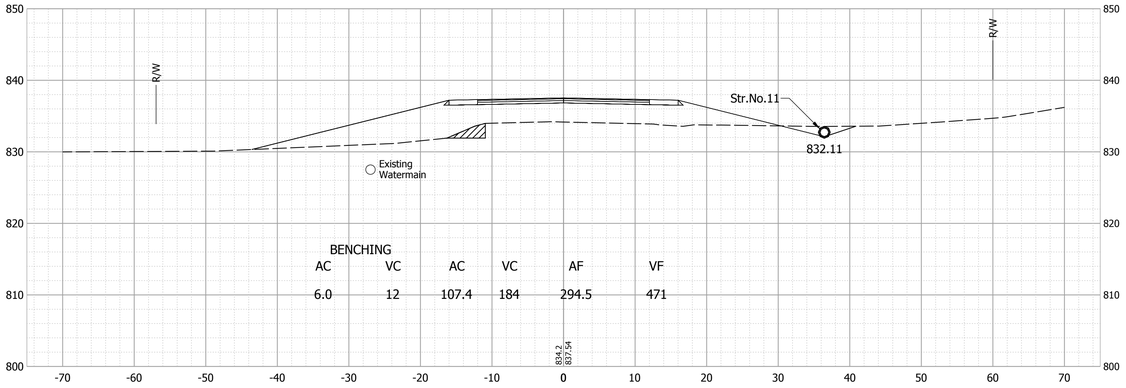

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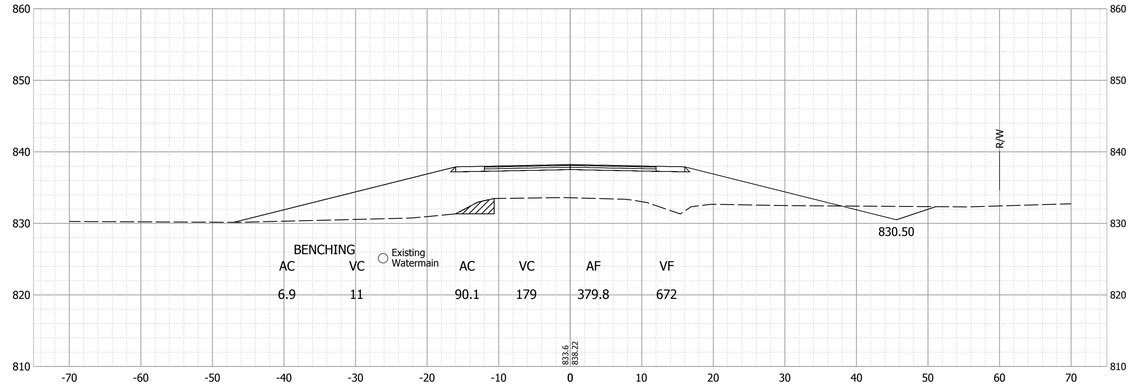

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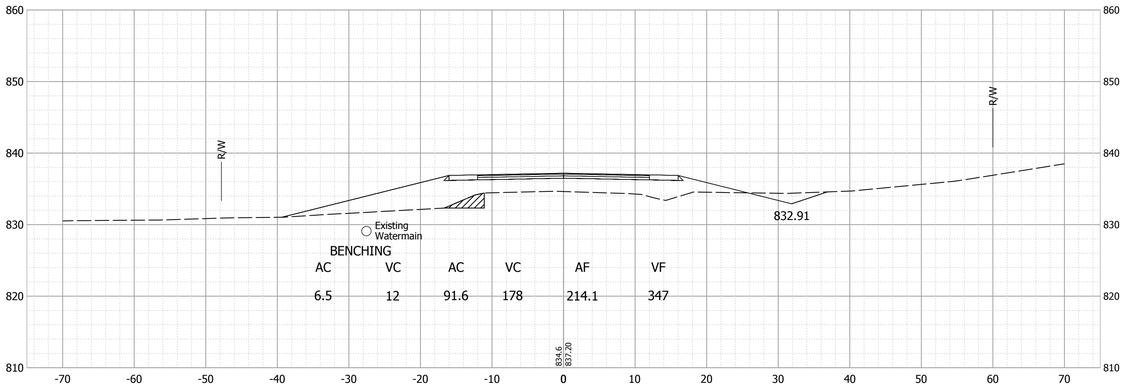

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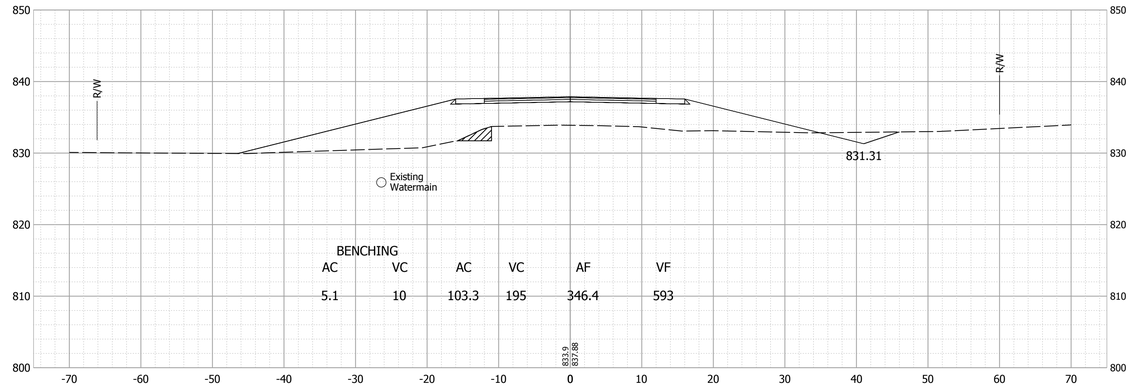

Date: May 25, 2017, 10:01am User Name: bstutzman
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RECOMMENDED FOR APPROVAL _____ 04/28/2017
DESIGN ENGINEER DATE

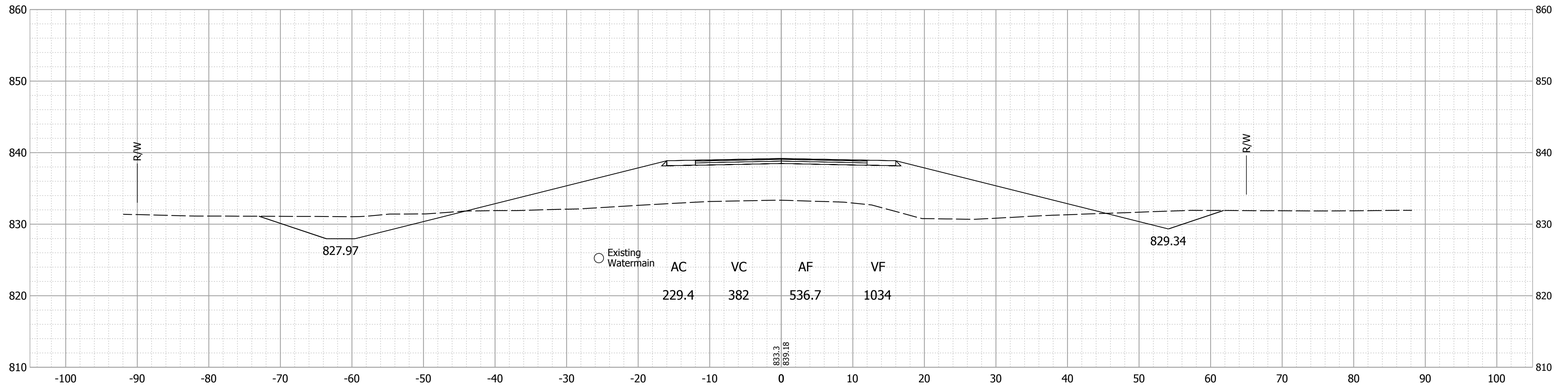
DESIGNED: MDV DRAWN: MDV
CHECKED: BKA CHECKED: BSS

HAMILTON COUNTY
HIGHWAY DEPARTMENT

CROSS SECTIONS

HORIZONTAL SCALE	BRIDGE FILE
1"=10'	HAMILTON CO. BR. 306
VERTICAL SCALE	DESIGNATION
1"=10'	PB-14-0004
SURVEY BOOK	SHEETS
	32 of 39
CONTRACT	PROJECT
----	PB-14-0004

56+50



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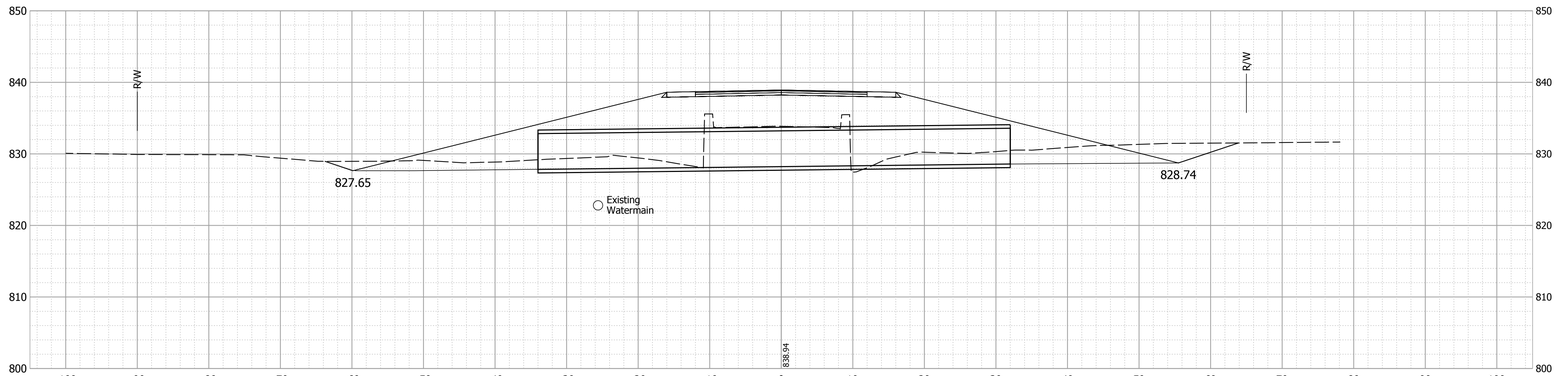

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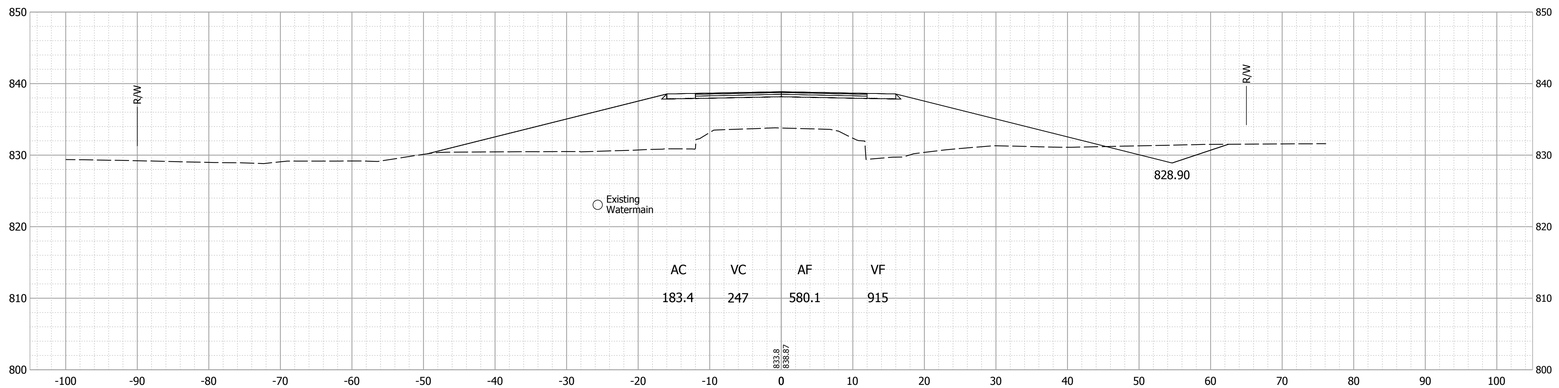

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RECOMMENDED FOR APPROVAL _____ 04/28/2017
DESIGN ENGINEER DATE

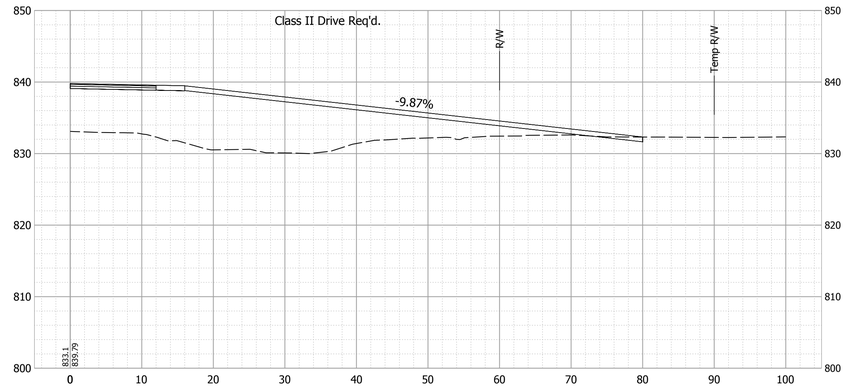
DESIGNED: MDV | DRAWN: MDV
CHECKED: BKA | CHECKED: BSS

HAMILTON COUNTY
HIGHWAY DEPARTMENT

CROSS SECTIONS

HORIZONTAL SCALE	BRIDGE FILE
1"=10'	HAMILTON CO. BR. 306
VERTICAL SCALE	DESIGNATION
1"=10'	PB-14-0004
SURVEY BOOK	SHEETS
	33 of 39
CONTRACT	PROJECT
----	PB-14-0004

57+56 DRIVE RT.



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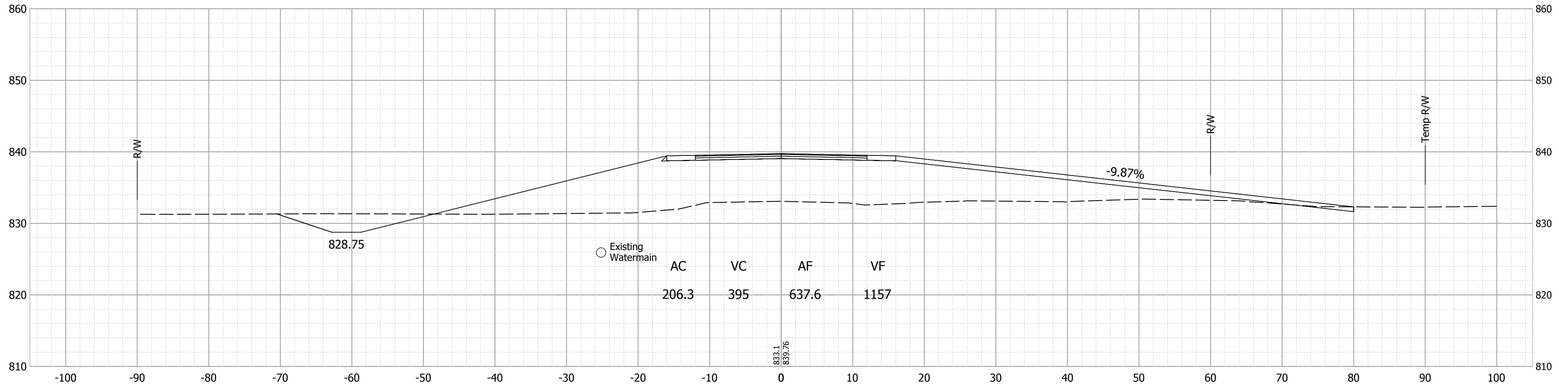

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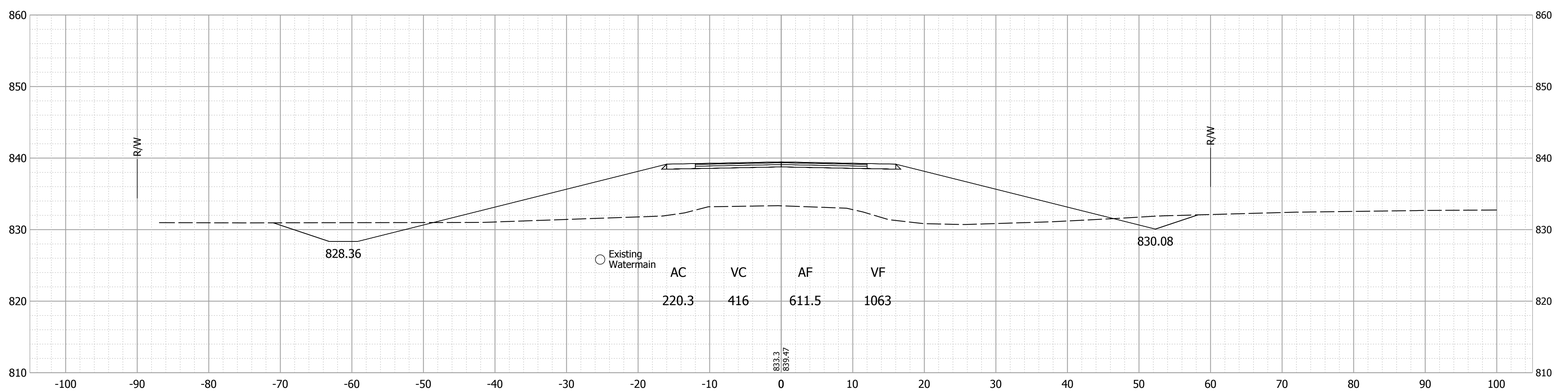

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RECOMMENDED FOR APPROVAL _____ 04/28/2017
DESIGN ENGINEER DATE

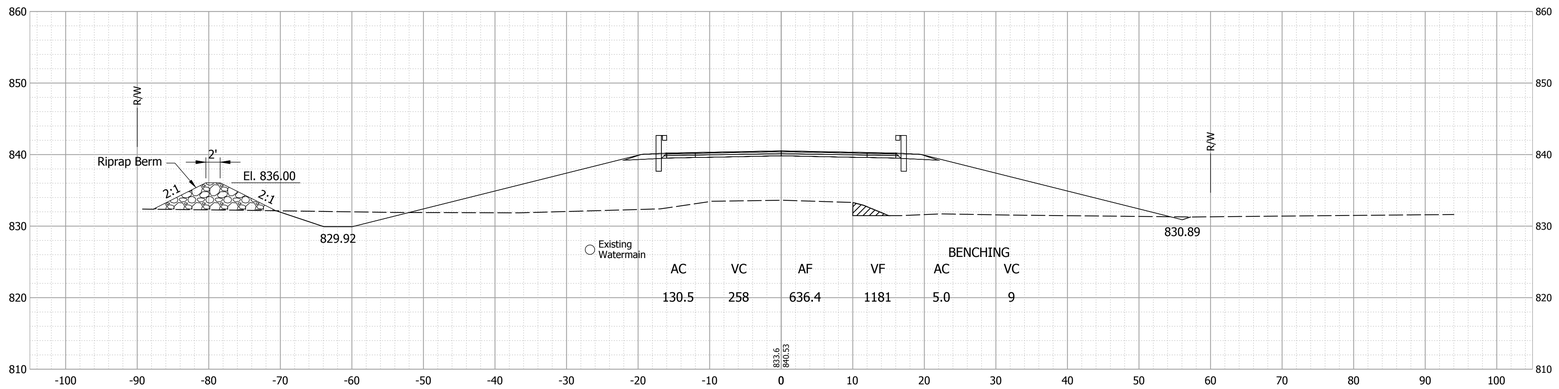
DESIGNED: MDV | DRAWN: MDV
CHECKED: BKA | CHECKED: BSS

HAMILTON COUNTY
HIGHWAY DEPARTMENT

CROSS SECTIONS

HORIZONTAL SCALE	BRIDGE FILE
1"=10'	HAMILTON CO. BR. 306
VERTICAL SCALE	DESIGNATION
1"=10'	PB-14-0004
SURVEY BOOK	SHEETS
	34 of 39
CONTRACT	PROJECT
----	PB-14-0004

59+00



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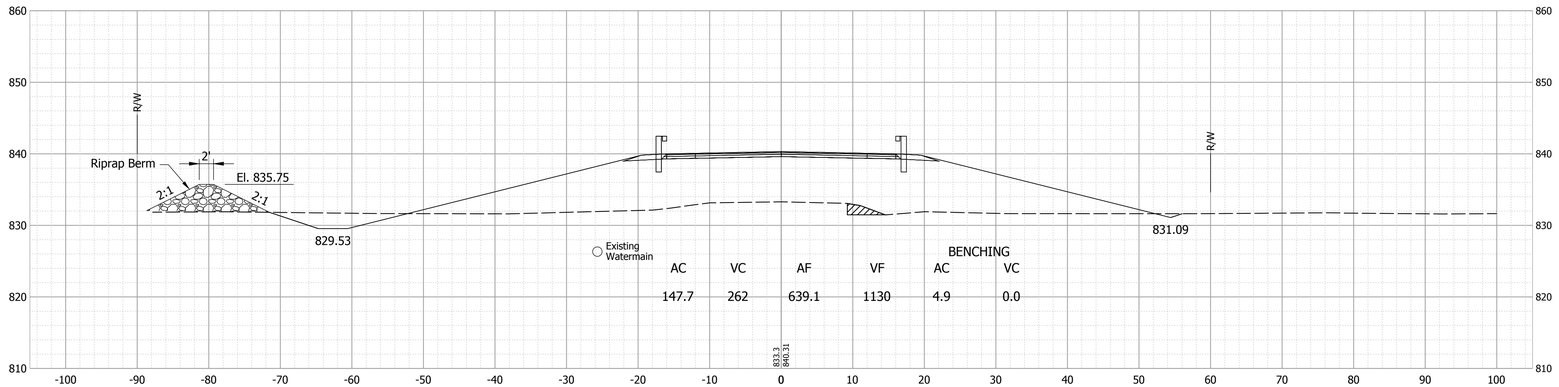

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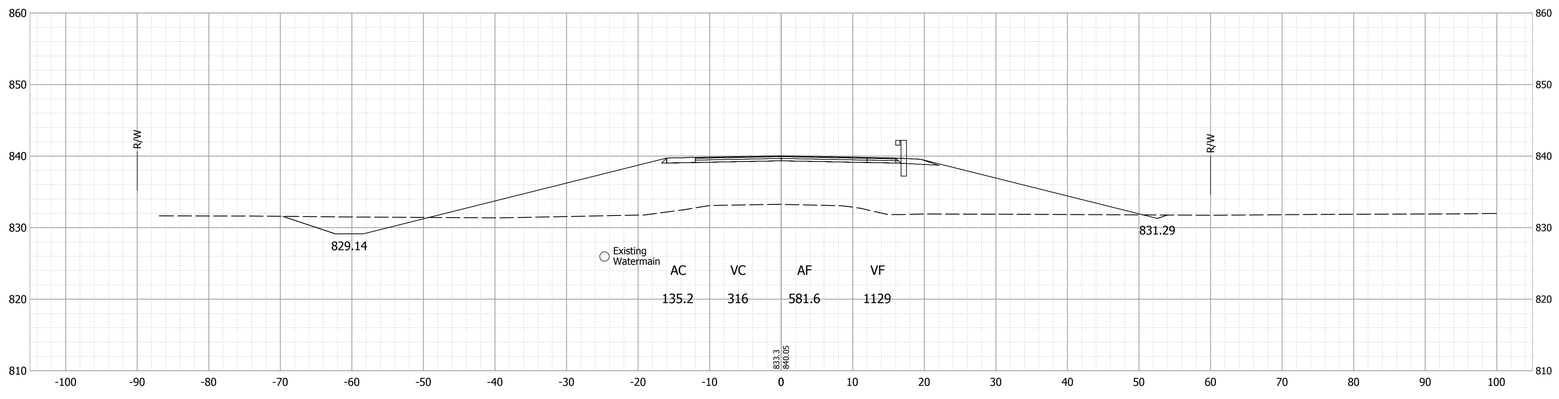

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RECOMMENDED FOR APPROVAL _____ 04/28/2017
DESIGN ENGINEER DATE

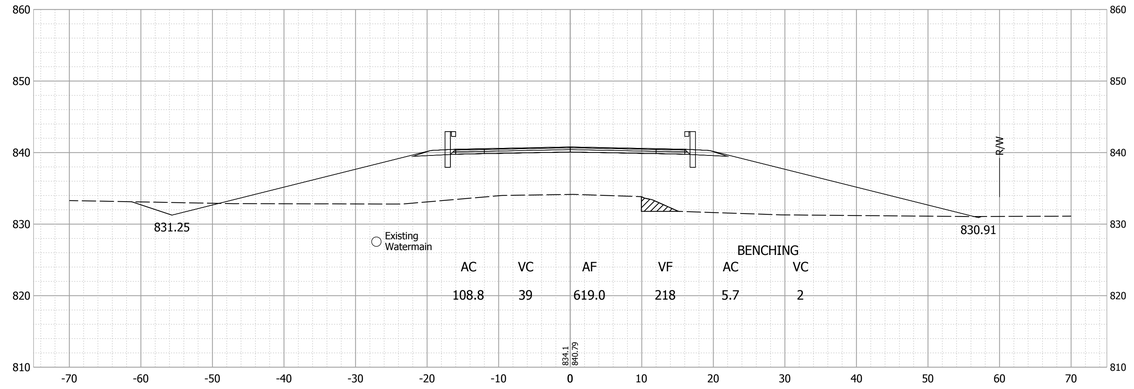
DESIGNED: MDV DRAWN: MDV
CHECKED: BKA CHECKED: BSS

HAMILTON COUNTY
HIGHWAY DEPARTMENT

CROSS SECTIONS

HORIZONTAL SCALE	BRIDGE FILE
1"=10'	HAMILTON CO. BR. 306
VERTICAL SCALE	DESIGNATION
1"=10'	PB-14-0004
SURVEY BOOK	SHEETS
	35 of 39
CONTRACT	PROJECT
----	PB-14-0004

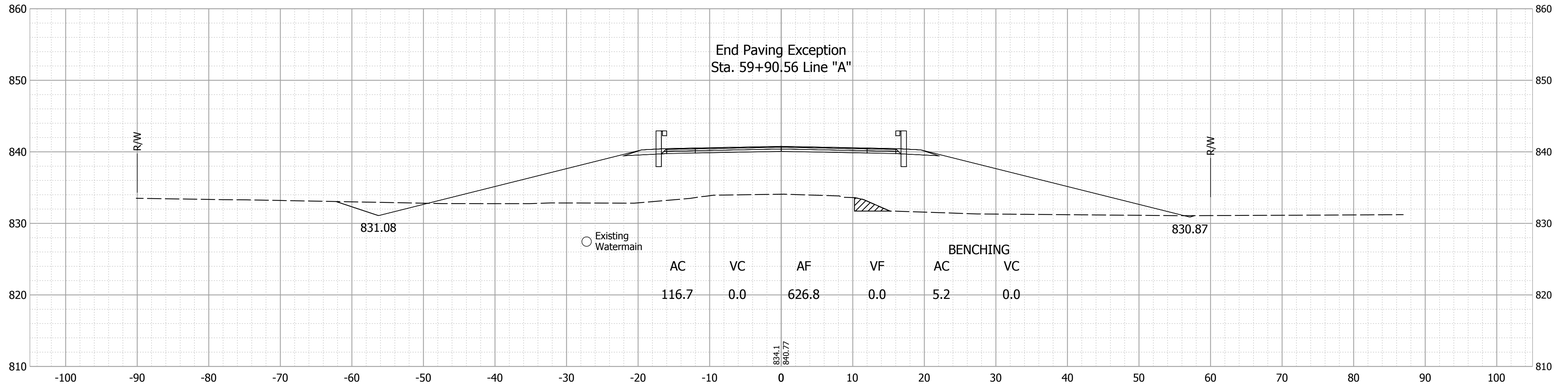
60+00



BENCHING

AC	VC	AF	VF	AC	VC
108.8	39	619.0	218	5.7	2

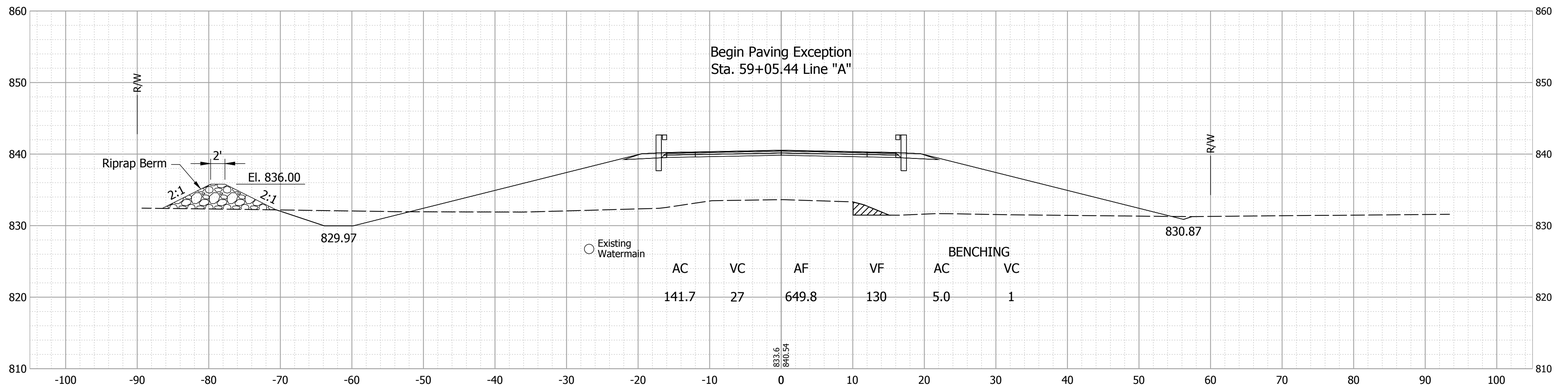
59+90.56



BENCHING

AC	VC	AF	VF	AC	VC
116.7	0.0	626.8	0.0	5.2	0.0

59+05.44



BENCHING

AC	VC	AF	VF	AC	VC
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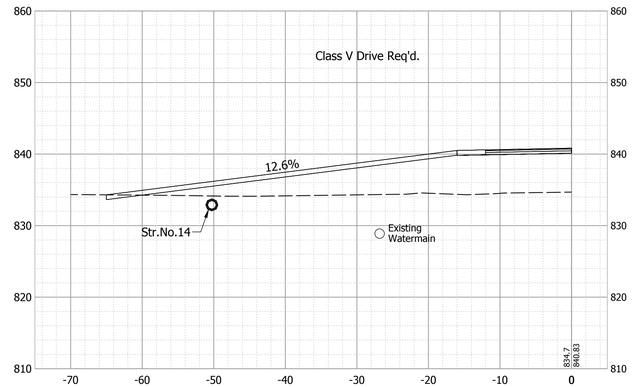
60+39 DRIVE LT.



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RECOMMENDED FOR APPROVAL _____ 04/28/2017
DESIGN ENGINEER DATE

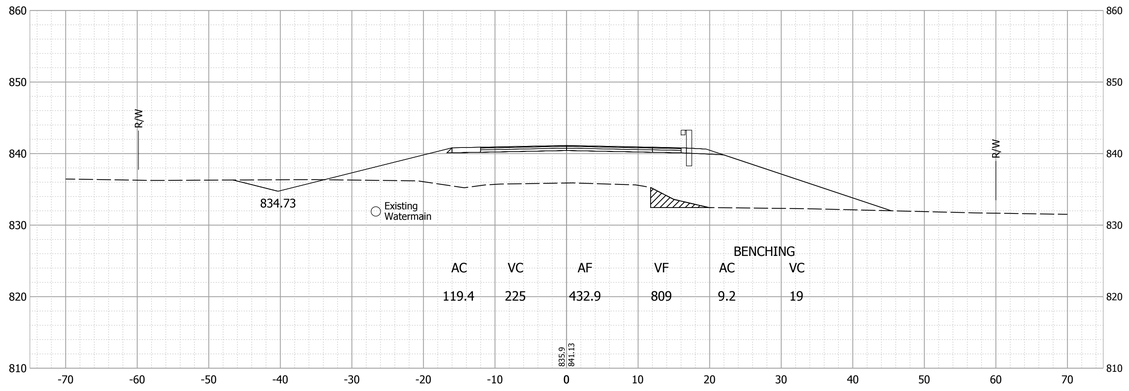
DESIGNED: MDV DRAWN: MDV
CHECKED: BKA CHECKED: BSS

HAMILTON COUNTY
HIGHWAY DEPARTMENT

CROSS SECTIONS

HORIZONTAL SCALE	BRIDGE FILE
1"=10'	HAMILTON CO. BR. 306
VERTICAL SCALE	DESIGNATION
1"=10'	PB-14-0004
SURVEY BOOK	SHEETS
	36 of 39
CONTRACT	PROJECT
----	PB-14-0004

61+50



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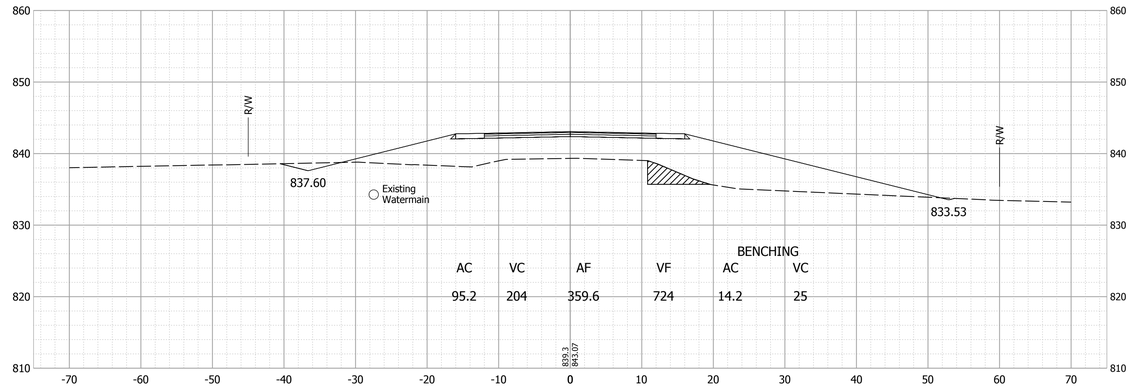

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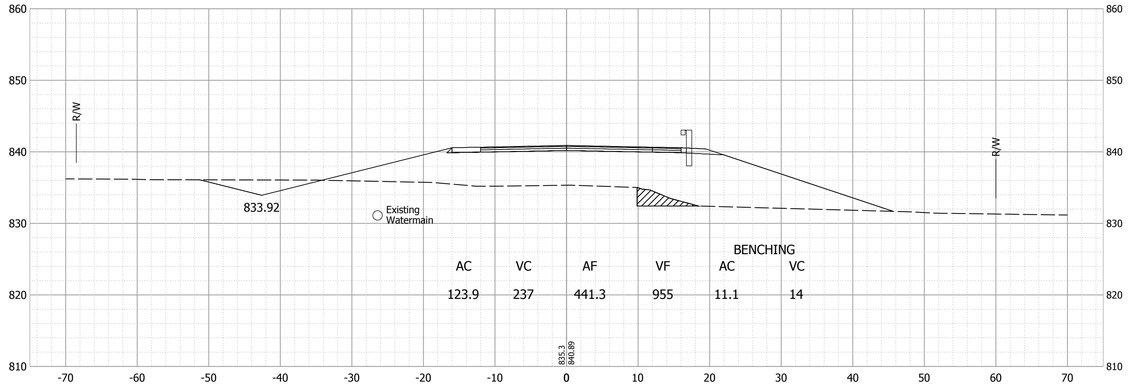

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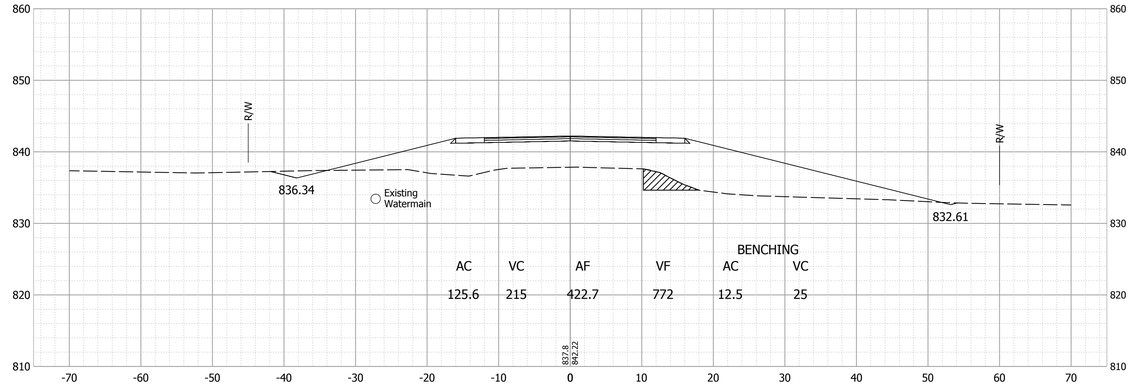

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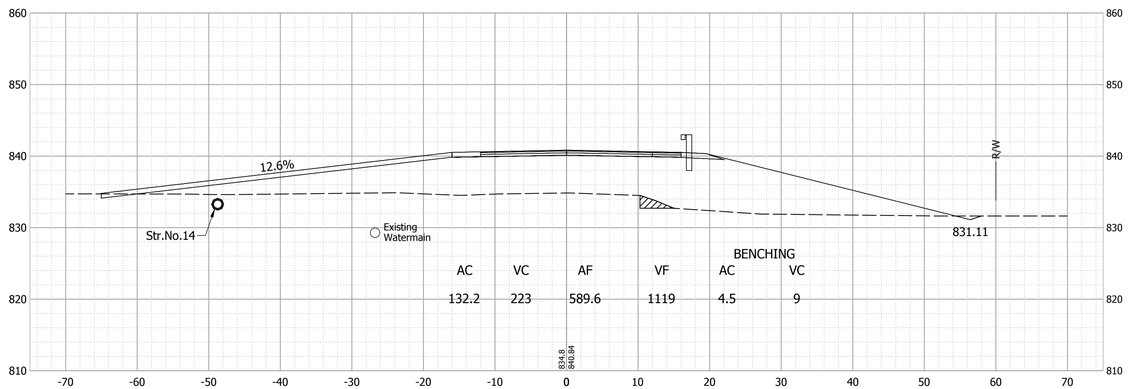

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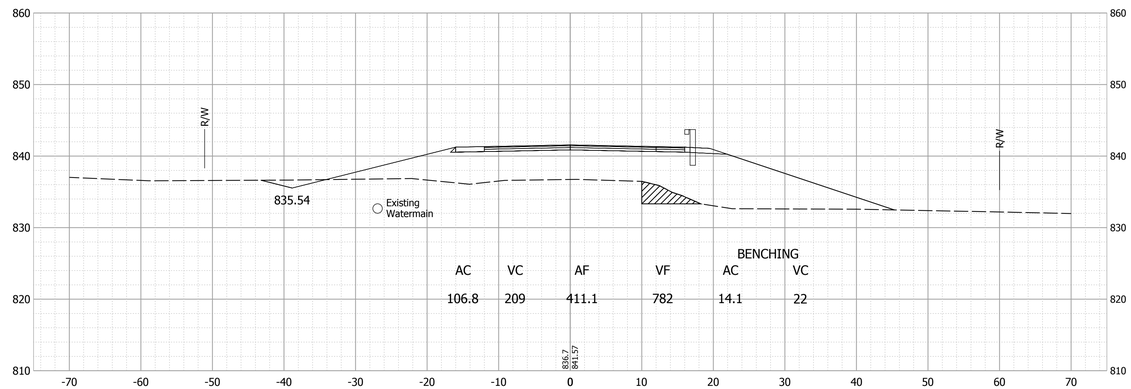

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RECOMMENDED FOR APPROVAL _____ 04/28/2017
DESIGN ENGINEER DATE

DESIGNED: MDV DRAWN: MDV

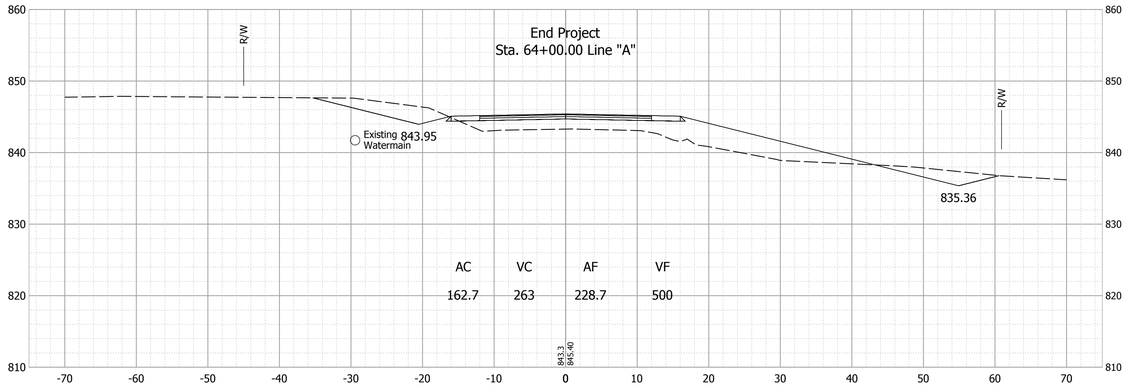
CHECKED: BKA CHECKED: BSS

HAMILTON COUNTY
HIGHWAY DEPARTMENT

CROSS SECTIONS

HORIZONTAL SCALE	BRIDGE FILE
1"=10'	HAMILTON CO. BR. 306
VERTICAL SCALE	DESIGNATION
1"=10'	PB-14-0004
SURVEY BOOK	SHEETS
	37 of 39
CONTRACT	PROJECT
----	PB-14-0004

64+00



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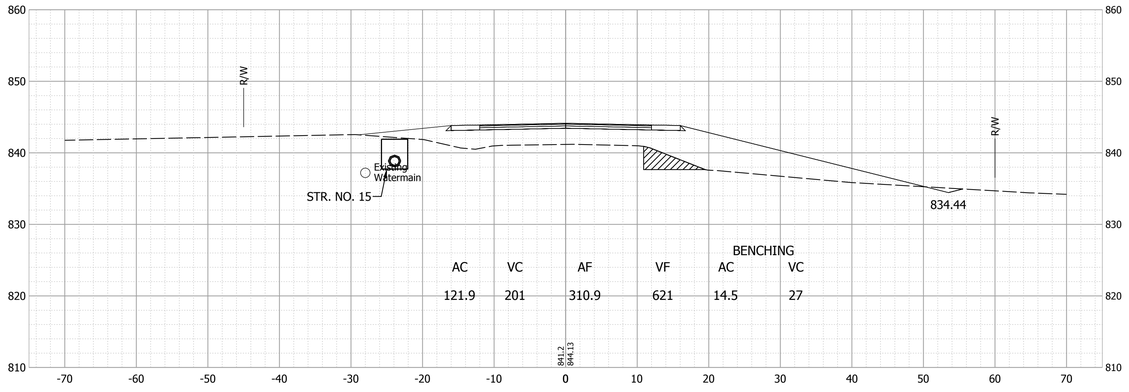

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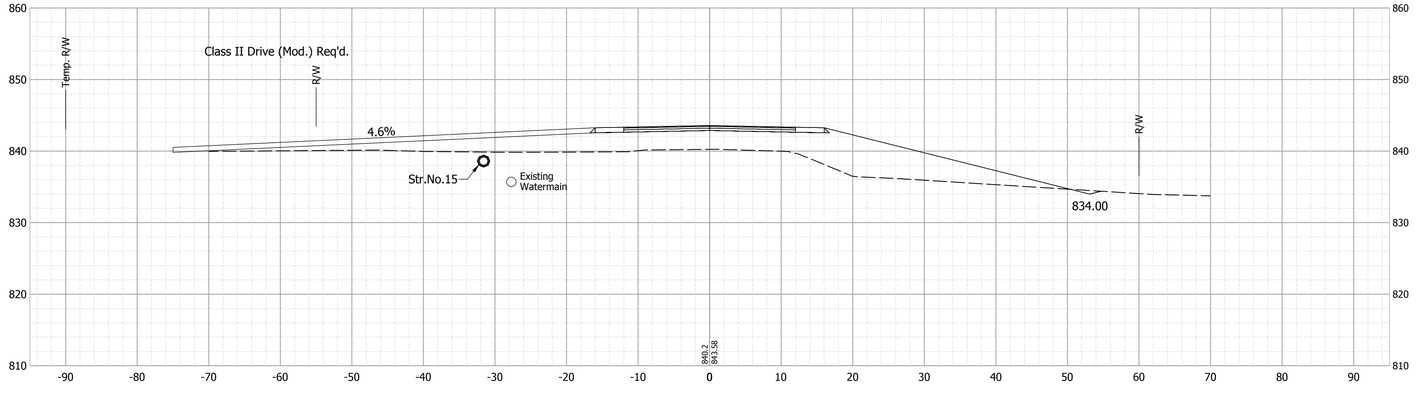

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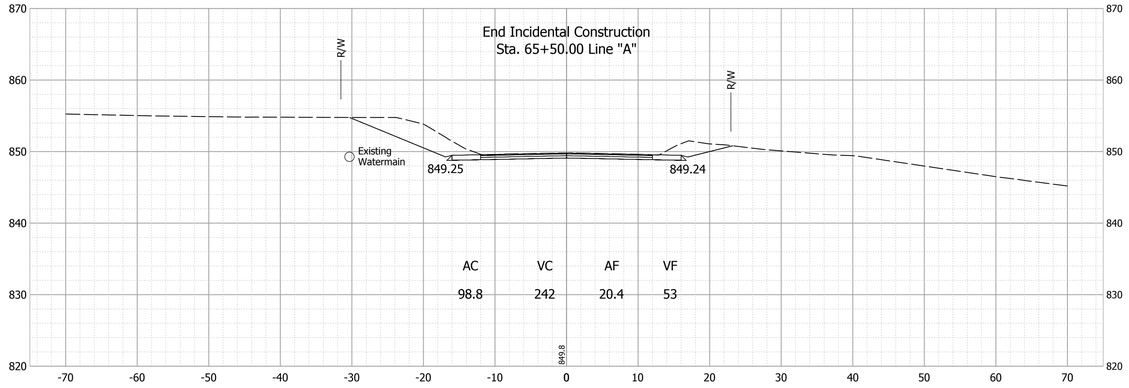
File: M:_2019\1214-0008\Road\CAD\CrossSect\Line A Xsects.dwg

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER 04/28/2017 DATE		HAMILTON COUNTY HIGHWAY DEPARTMENT	HORIZONTAL SCALE 1"=10' / BRIDGE FILE HAMILTON CO. BR. 306
DESIGNED: MDV	DRAWN: MDV	CROSS SECTIONS	VERTICAL SCALE 1"=10' / DESIGNATION PB-14-0004
CHECKED: BKA	CHECKED: BSS		SURVEY BOOK / SHEETS 38 of 39
			CONTRACT ---- / PROJECT PB-14-0004

65+50



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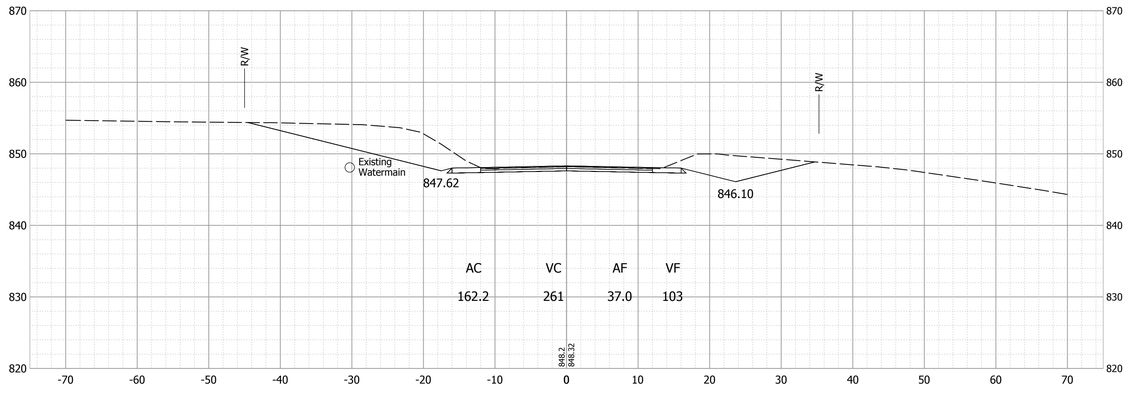

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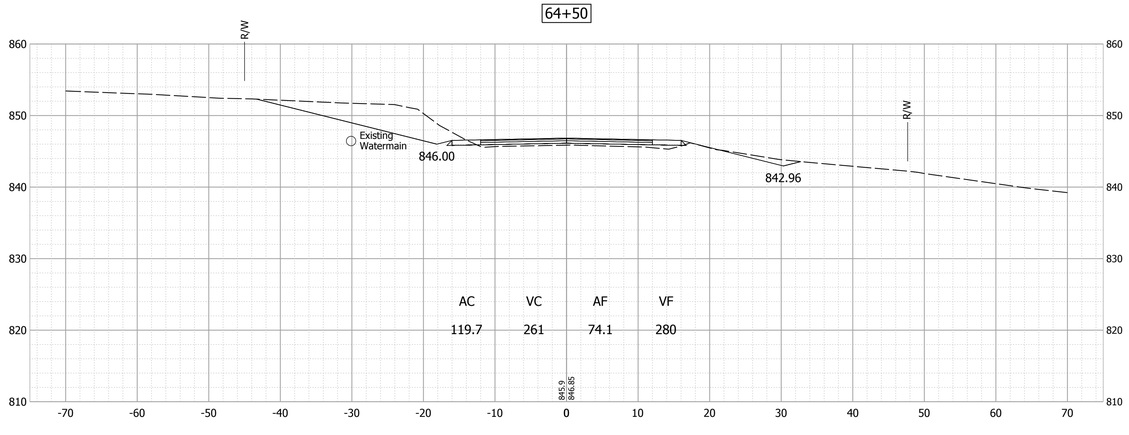

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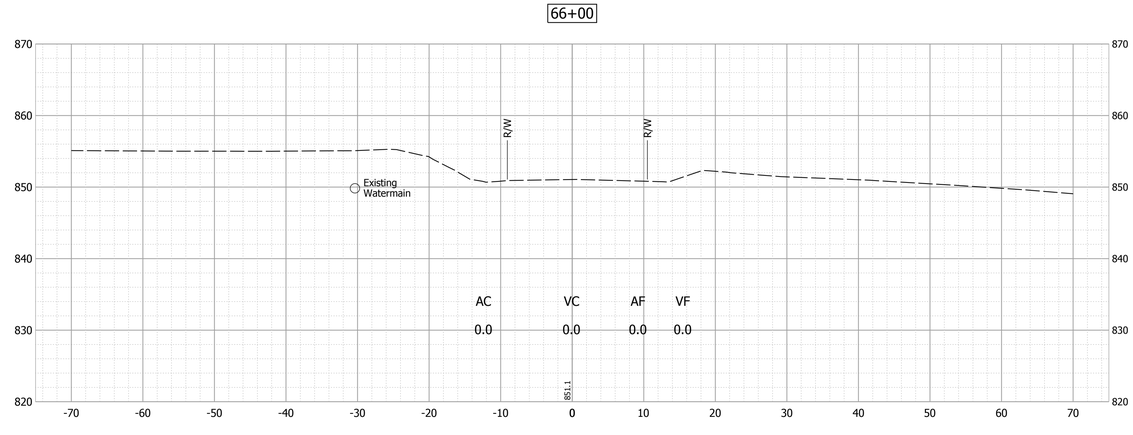


Date: May 25, 2017, 10:02am User Name: bstutzman
File: M:_2019\214-0030\Road\CAD\CrossSect\Line A Xsects.dwg

RECOMMENDED FOR APPROVAL _____ 04/28/2017
DESIGN ENGINEER DATE

DESIGNED: MDV DRAWN: MDV

CHECKED: BKA CHECKED: BSS

HAMILTON COUNTY
HIGHWAY DEPARTMENT

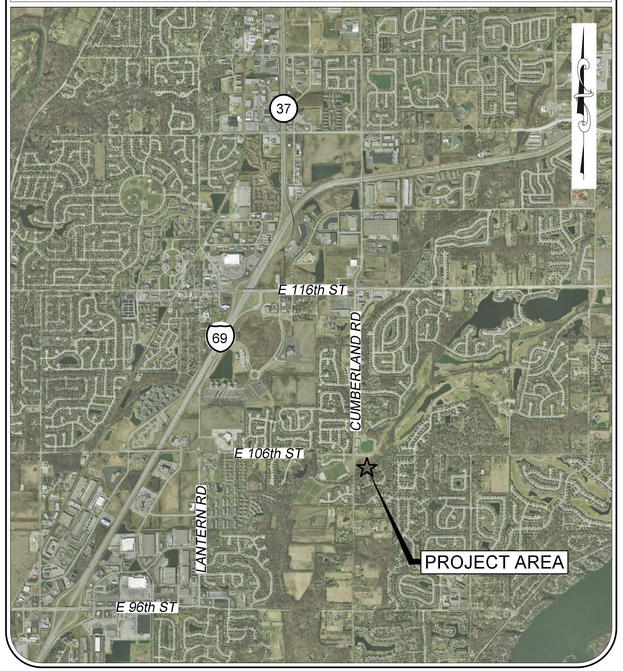
CROSS SECTIONS

HORIZONTAL SCALE	BRIDGE FILE
1"=10'	HAMILTON CO. BR. 306
VERTICAL SCALE	DESIGNATION
1"=10'	PB-14-0004
SURVEY BOOK	SHEETS
	39 of 39
CONTRACT	PROJECT
----	PB-14-0004

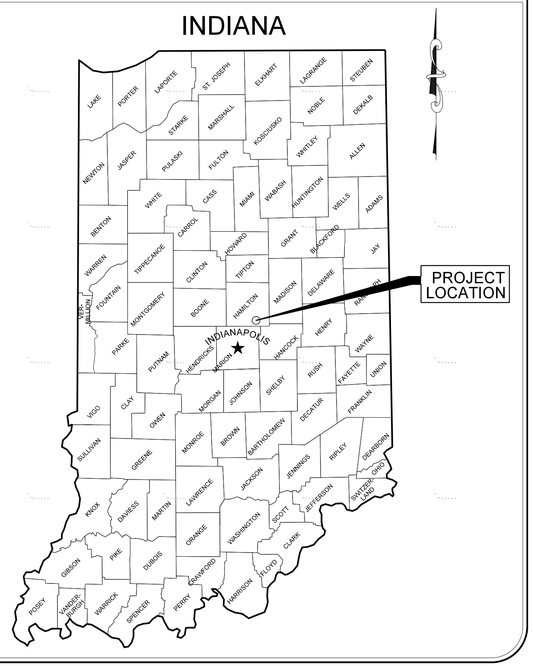
MUD CREEK WETLAND MITIGATION

HAMILTON COUNTY, INDIANA

VICINITY MAP



LOCATION MAP



SHEET INDEX

Indiana 811
Know what's below.
Call before you dig.

PREPARED FOR:

HAMILTON COUNTY HIGHWAY DEPARTMENT
ONE HAMILTON COUNTY SQUARE
NOBLESVILLE, INDIANA 46060
(317) 776-8495

PREPARED BY:

CHRISTOPHER B. BURKE ENGINEERING, LLC
PNC Center, Suite 1368 South
115 West Washington Street
Indianapolis, Indiana 46204
Phone: (317) 266-8000 FAX: (317) 632-3306

ISSUED FOR BID

INTERIM DESIGN NOTE:
Portions of the work shown on this plan set are identified to be completed by others at a later date.

CERTIFIED:

BRIAN J. MEUNIER REGISTERED No. PE11300321 STATE OF INDIANA PROFESSIONAL ENGINEER

ENGINEER 4/26/17 DATE

BRIAN J. MEUNIER, P.E.
INDIANA REGISTRATION No. PE11300321
EXPIRATION DATE: JULY 2018

MUD CREEK WETLAND MITIGATION
HAMILTON COUNTY, INDIANA

4/26/2017
Project 19.R160411.00001

4/26/2017
R:\2016\16-0411.00000\CAD\DGN Files\20170405160411_TS.dgn

GENERAL NOTES

1. The CONTRACTOR shall not perform work on any day between the hours of 7:00 p.m. to 7:00 a.m. or on Sunday and Holidays without prior approval from OWNER.
2. The CONTRACTOR and any SUB-CONTRACTORS shall comply with the state and local laws and federal requirements of the Occupational Safety and Health Act of 1970 (OSHA), as they relate to their operations.
3. The CONTRACTOR shall be required to comply with all state, local, and federal regulations regarding air, water and noise pollution. The CONTRACTOR shall not build fires on the site.
4. The CONTRACTOR shall ensure that all employees and applicants employed in the performance of work with respect to hire, tenure, terms, conditions or privileges of employment of any matter directly related to employment will not be discriminated against because of race, religion, color, sex, disability, national origin, or ancestry.
5. The CONTRACTOR shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the work and shall take all necessary precautions for the safety of all employees, visitors, equipment, or other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and underground facilities not designated for removal, relocation, or replacement on the plans.
6. The CONTRACTOR shall call the Indiana Underground Plant Protection Service ("Holey-Moley") by dialing 811 at least 48 hours prior to commencement of land-disturbing activities to schedule a utility locate. It is the CONTRACTOR'S responsibility to verify the location of all existing utilities and to report any discrepancies or omissions with the existing utilities shown on the plans to the ENGINEER immediately.
7. The CONTRACTOR shall protect all existing utilities as required to prevent damage. All utilities must be fully operational and accessible throughout the duration of the project. Any and all damage to existing utilities must be repaired in kind at the CONTRACTOR'S expense.
8. There shall be no storage of equipment, materials, debris, soil, etc. in the street or right-of-way without written permission from the City of Fishers.
9. There shall be no storage of equipment, materials, debris, soil, etc. within the floodway of Mud Creek.
10. Temporary traffic control is the responsibility of the CONTRACTOR. The CONTRACTOR shall coordinate with the City of Fishers to determine exact traffic control requirements.
11. The CONTRACTOR shall minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during construction operations. The CONTRACTOR shall not close or obstruct streets walks, or other adjacent occupied or used facilities without permission from the OWNER and authorities having jurisdiction. The CONTRACTOR may cross roads and streets during the performance of the work if necessary, at the approval of the OWNER, however, the CONTRACTOR shall protect all roads and streets at heavy-equipment crossings as needed to protect pavement. The CONTRACTOR shall provide road barriers and/or a flag person to control traffic during all times when construction equipment is crossing public roads or when otherwise warranted.
12. Any pavement or curb damaged by construction activity shall be replaced in kind by the CONTRACTOR at no cost to the OWNER.
13. If the CONTRACTOR finds a conflict, error or discrepancy in the construction documents of plans, the CONTRACTOR shall so report to the ENGINEER by email at once before proceeding with the work affected thereby and shall obtain a written interpretation or clarification from the ENGINEER.
14. All work shall be constructed in accordance with the lines and grades shown on the plans. The full responsibility for keeping alignment and grades shall rest upon the CONTRACTOR at no additional cost to the OWNER.
15. The CONTRACTOR shall immediately remove mud tracked by his vehicles onto the public roadways when the road is in use, otherwise, before a closed section is returned to service.
16. The excavation shall be maintained such that positive drainage is provided at all times. The CONTRACTOR shall be responsible for all costs associated with dewatering of any excavation in order to provide positive drainage and any costs associated with the disposal of such water.
17. The temporary erosion control system installed by the CONTRACTOR shall be properly maintained as indicated on the plans of as directed by the OWNER to control erosion and siltation at all times during the life of the contract. This work shall include repair of the various systems, removal of trapped sediment and cleaning or replacement of any silt filter fabric or other control measures. Accumulated silt in the work areas shall be removed from the site as an incidental cost to the project, or shall be used on-site if approved by the OWNER. Any additional materials and work required by the ENGINEER to control erosion shall be measured and paid for as specified. If the CONTRACTOR fails to maintain the temporary erosion control system as directed by the ENGINEER, the OWNER may at the expiration of a period of 48 hours, after having given the CONTRACTOR written notice, proceed to maintain the systems as deemed necessary, and the cost thereof be deducted from and compensation due the CONTRACTOR under this contract.
18. The CONTRACTOR shall obtain permission from the necessary stakeholders for all work performed outside of the OWNER'S right-of-way.
19. The CONTRACTOR shall be fully responsible to the OWNER for all acts and omissions of his SUB-CONTRACTORS, suppliers, and other persons and organizations performing of furnishing any of the work or goods under a direct or indirect contract with the CONTRACTOR just as the CONTRACTOR is responsible for the CONTRACTOR'S own acts and omissions. The CONTRACTOR shall assume sole obligation for the payment of any monies due the any SUB-CONTRACTOR, supplier, or other person or organization, except as may be otherwise required by laws and regulations.
20. Upon completion of the work and prior to acceptance of the project, the CONTRACTOR shall be required to furnish the OWNER and ENGINEER each with one set of marked-up plans showing the as-constructed location and elevations of all construction components.
21. The CONTRACTOR shall be responsible to secure the construction site against unauthorized entrance by persons and vehicles outside of and during working hours. This includes securing the site against dumping and trespassers. The cost of any additional security measures deemed necessary by the CONTRACTOR shall be incidental to the contract. If the CONTRACTOR fails to maintain security of safety measures at the project site, the OWNER may at the expiration of a period of 48 hours, after having given the CONTRACTOR written notice, proceed to provide additional measures as deemed necessary, and the cost thereof shall be deducted from any compensation due, or which may become due to the CONTRACTOR under this contract.
22. The CONTRACTOR shall allow the OWNER, ENGINEER, or OWNER'S representative's access to the site at all times.
23. The OWNER is responsible for the following permits for this project:
    a. Indiana Department of Natural Resources Construction in a Floodway Permit,
    b. Indiana Department of Environmental Management Section 401 Water Quality Certification,
    c. United States Army Corps of Engineers Section 404 Permit, and
    d. Indiana Department of Environmental Management Rule 5 Permit.

    Copies of all permits obtained will be provided to the CONTRACTOR by the OWNER. The CONTRACTOR is responsible for compliance with permit conditions and requirements. The CONTRACTOR shall be responsible for obtaining all other permits and/or licenses as required by law/ordinance or regulation.
24. Do not work in the waterway from April 1 through April 30 without prior written approval from the Indiana Department of Natural Resources Division of Fish and Wildlife.
25. Do not cut any trees suitable for Indiana bat roosting (greater than 3-inches DBH, living or dead, with loose hanging bark) from April 1 to September 30.

CONSTRUCTION NOTES

1. The CONTRACTOR shall stake out and mark limits of construction so they are clearly visible. All construction activities shall be performed within the designated construction limits.
2. The CONTRACTOR shall clearly mark all underground utilities, culverts, and underground drains prior to construction.
3. The CONTRACTOR shall deploy suitable equipment for the excavation, compaction, and grading of soil to construct the work. The CONTRACTOR shall perform excavation to the lines and grades shown on the plans.
4. Responsibility for the repair of utilities and structures when broken or otherwise damaged shall be borne by the CONTRACTOR. Materials damaged by the CONTRACTOR during handling or placement operations shall be replaced in-kind by the CONTRACTOR at CONTRACTOR'S sole expense. Such damaged materials shall be removed from the site by the CONTRACTOR.
5. The CONTRACTOR shall provide sufficient dewatering equipment and make satisfactory arrangements for the disposal of water collected or removed during construction without undue interference with other work or damage to surrounding property. The CONTRACTOR shall not place fill or topsoil within construction areas containing standing water. If the CONTRACTOR uses pumping equipment, care and measures shall be deployed to minimize intake of sediments and scouring at discharge points.
6. All demolition items shall be removed from the site at the CONTRACTOR'S expense.
7. Throughout the project duration, the contractor shall ensure positive drainage is maintained on the exposed soils to prevent excess absorption of rainfall. Ruts, holes, and other depressed areas shall be filled immediately to prevent ponding.
8. The use of explosives is NOT permitted.
9. Open burning is NOT permitted.
10. Items noted or otherwise identified to be salvaged (if any) shall be returned to the OWNER in the original condition.
11. The CONTRACTOR shall remove all reusable topsoil from excavation areas for placement on final graded areas.
12. The CONTRACTOR shall not stockpile any material on-site overnight or during non-working hours. Spoil material resulting from the work shall be stockpiled at an offsite location. The location and extent of the stockpile shall be the responsibility of the CONTRACTOR. CONTRACTOR shall comply with all federal, state, and local requirements when stockpiling spoil materials. CONTRACTOR shall provide OWNER with a site layout and copies of all required permit approvals for any offsite stockpile or laydown areas.
13. Topsoil shall be placed in one loose lift in all areas where the underlying soils will not support vegetative growth. If adequate topsoil volumes are not available from on-site sources, the CONTRACTOR shall amend available soil to produce a suitable growth medium. The final surface shall be graded smooth to final design grades. All significant surface variations, including vehicle tire or equipment track ruts, shall be smoothed out with a grader box or other method. Final grading performed by dozers shall be done in a manner such that the track cleats are oriented parallel to the contours to minimize runoff velocity down the slope and to help maintain moisture in the topsoil to promote vegetative growth.
14. Shop drawings of product certification information of all constructed of supplied project materials shall be submitted to the OWNER of ENGINEER for review prior to implementation or installation.
15. Upon substantial completion and again at final completion of construction, prior to demobilization, the CONTRACTOR shall ensure that all excess construction materials and debris, including unsuitable soils, tree limbs, brush, trash, temporary erosion control measures, and miscellaneous construction materials are removed from the project site and disposed of properly. All disturbed areas shall be restored to the satisfaction of the OWNER and ENGINEER.
16. The CONTRACTOR shall repair erosion damage to the finished surfaces at no additional cost to the OWNER. Accumulated sediment form erosion shall be removed by CONTRACTOR at no additional cost to the OWNER.
17. The CONTRACTOR shall maintain final grades and vegetation in the wetland areas until the vegetation is established and accepted by the OWNER. The CONTRACTOR shall repair erosion damage to the finished surfaces and vegetation at his own expense.
18. The CONTRACTOR shall perform post-construction maintenance on the new vegetation for a period of two (2) year from substantial completion. Vegetation must be established and accepted by the OWNER prior to final completion and release of retainage.

Work to be completed by Contractor under current contract:

1. Installation and maintenance of temporary erosion control measures
2. Installation of construction entrance
3. Topsoil clearing, mass grading, fine grading, topsoil placement, and micro-grading inside area identified as 'Deed Restricted Area'
4. Installation of live plant material, trees, shrubs, and seeding
5. Installation of environmental signage ("Do not mow – Do not spray" signs)
6. Installation of permanent erosion control measures
7. Removal of temporary erosion control measures

Work to be completed by Others under separate contract:

1. Installation of pedestrian trail subbase, HMA, and footbridges
2. Earthwork outside of 'Deed Restricted Area'

GENERAL CONSTRUCTION SEQUENCE

1. This General Construction Sequence has been assembled for project guidance and may be adjusted to meet the CONTRACTOR'S specific plans; however, the sequence of Step 2 through Step 6 shall not be altered. The CONTRACTOR shall generally perform the following steps to complete the project.
2. Stake the construction limits.
3. Locate, mark, and protect all existing utilities.
4. Install temporary traffic control measures as required by the City of Fishers.
5. Construct staging area and construction entrance.
6. Install silt fence as indicated on the plans.
7. Remove topsoil for areas to be disturbed within construction limits.
8. Excavate and grade constructed wetland area as indicated on the plans.
9. Construct clay cap in planned open water areas of wetland pods as indicated on the plans.
10. Apply topsoil to all areas that are to be seeded.
11. Install wetland plantings as indicated on the plans.
12. Pedestrian trail footbridges indicated on the plans to be completed by others at a later date.
13. Install environmental signage along pedestrian trail as indicated on plans.
14. Stabilize all disturbed areas of the project that are completed, as work proceeds, with temporary or permanent seeding, mulch, and erosion control blankets as described on the drawings. Apply fertilizer, lime (if needed), mulch, and seed to permanently stabilize.
15. Remove temporary erosion control measures upon OWNER'S approval and after vegetation is established and approved by the ENGINEER.
16. The CONTRACTOR shall provide to the OWNER and ENGINEER an updated as-built topographic survey which includes documentation of all aspects of the project.

4/26/17

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PNC Center, Suite 1368 South
115 West Washington Street
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(317) 266-8000 FAX: (317) 632-3306

PROJECT:
MUD CREEK WETLAND MITIGATION
HAMILTON COUNTY, INDIANA

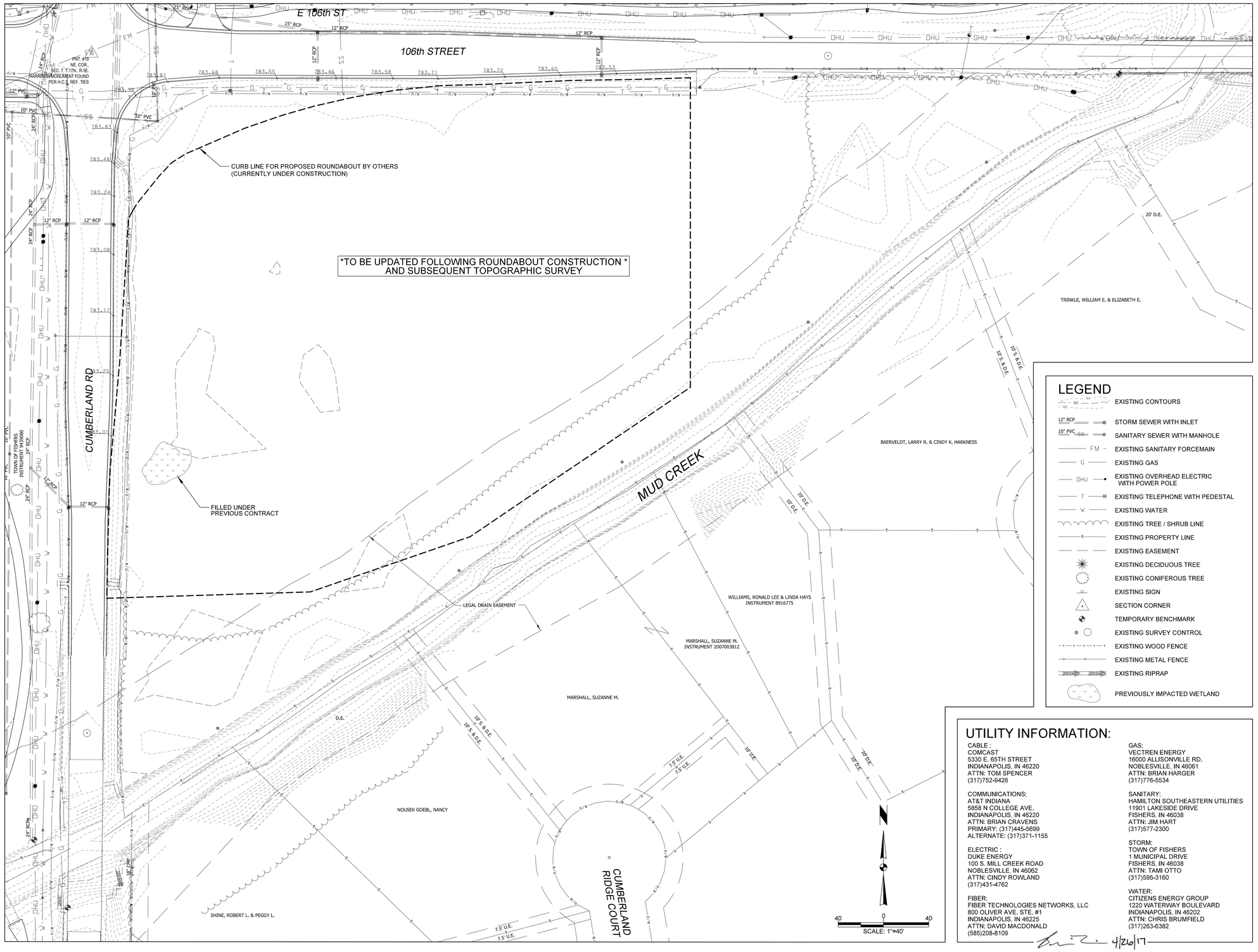
NO.	DATE	NATURE OF REVISION	CHKD.
1	4/26/17	ISSUED FOR BID	BJM
FILE NAME	R:\2016\16-0411.00000\CAD\DGN Files\20170405\160411_GN1.dgn		

DSGN.		BJM
DWN.		DJW
CHKD.		BWM
SCALE:		AS NOTED
DATE:		5/22/2017

BRIAN J. MELINIER REGISTERED No. PE11300321 STATE OF INDIANA PROFESSIONAL ENGINEER

TITLE:
GENERAL NOTES

PROJECT NO. 19.R160411.00000
SHEET 2 OF 10
DRAWING NO. GN1



SURVEY ORIGINALLY COMPLETED FOR TOWN
OF FISHERS AND USED WITH PERMISSION.

SURVEYOR'S REPORT

Project: 106th Street and Cumberland Road - Intersection Improvement

Client: Town of Fishers, Indiana

This project is located in Sections 5, 6, 7 & 8, Township 17 North, Range 5 East of the Second Principal Meridian, Town of Fishers, Delaware & Fall Creek Townships, Hamilton County, Indiana. The scope of this project was to obtain data to be used for possible design improvements to the intersection of 106th Street and Cumberland Road. A Location Control Route Survey Plat (LCRSP) with accompanying original survey field book and topographic data was to be provided to the client. The LCRSP will serve as a basis of describing any right-of-way required for said improvements. It is not a property retracement survey. Any apparent property lines and corners, subdivision lines and corners, or section lines and corners are based upon physical evidence or testimony. If additional U.S.P.L.S.S. corners are required for said improvements, they should be tied to this survey.

The Basis of Bearing for the survey is the Indiana State Plane Coordinate System (ISPCS), East Zone (NAD 83 2011), which is a grid coordinate system. The horizontal control system was established by using the National Geodetic Survey's Online Positioning User Service (OPUS). Using Trimble R6 GPS equipment, an OPUS solution was performed at Control Point #1, and the following information resulted from said solution:

Control Point #1
Latitude: N 39°56'27.17875"
Longitude: W 85°59'45.89717"
Northing: 1709333.2349
Easting: 235716.6382

Trimble Business Center (TBC) software using a least squares adjustment was used in the processing of the GPS data. The following information pertains to said control work:

Projection Name: Indiana State Plane Coordinate System - East Zone
Projection Type: Transverse Mercator
Horizontal Datum: North American Datum of 1983 (NAD 83), 2011 Adjustment
Geoid Model: GEOID12A
Reference Frame: WGS 84
Project Units: U.S. Survey Feet

After the horizontal control system was established, it was converted to a local, ground system by scaling the control data from said grid system to a ground system using a combination factor of X=1.0000555630 (1/X=0.999944440) that was applied at Control Point #1. The system was then translated by subtracting 1,699,333.2349 from all northings and by subtracting 225,716.6382 from all eastings of each point. This resulted in Control Point #1 having local, ground coordinates of N: 10,000.0000, E: 10,000.0000. No rotation was performed. All distances and coordinates shown hereon are ground distances and coordinates.

The vertical datum of the project was established by holding Indiana Department of Natural Resources Benchmark HAM 86, 1989 which has a published elevation of 784.773 feet. It is on the National Geodetic Vertical Datum of 1929 (NGVD 29). Additional temporary benchmarks were established through differential leveling using a Sokkia automatic level. The project's vertical datum is NGVD 1929.

Cross-sections and topographic information within the project limits were collected using Trimble R6 GPS equipment, a Nikon total station, and an electronic field book. The topography of the project is graphically represented in AutoCAD Civil 3D 2012 format and coordinate information is provided in a ".txt" file in the following format:
Point Number, Northing, Easting, Elevation, Description

Right-of-way and deed line information is shown per subdivision plats and deeds on file with the Office of the Recorder of Hamilton County, Indiana. Where no right-of-way records exist, the existing right-of-way is shown as the edge of the travel lane. Owner information shown is based on current tax records in the Auditor's Office of said county.

In accordance with Title 865 of the Indiana Administrative Code, the following observations and opinions are offered regarding the monuments found or set for the survey. Unless otherwise noted, all monuments found and set were found or set flush with grade.

Harrison Monuments were found at the north quarter corner of Section 7 (Pnt. #18), the northeast corner of Section 7 (Pnt. #19), the north quarter corner of Section 8 (Pnt. #20), the east quarter corner of Section 6 (Pnt. #21) and the east quarter corner of Section 7 (Pnt. #22) all in Township 17 North, Range 5 East per Hamilton County Surveyor reference ties. The uncertainty associated with the locations of these monuments, in my opinion, is negligible.

The uncertainty associated with the locations of any of the route survey control lines due to occupation or possession lines, in my opinion, is negligible.

This survey (performed in the field from March 4, 2013 to March 25, 2013 under my supervision), to the best of my knowledge and belief, was executed according to the provisions of Title 865 of the Indiana Administrative Code regarding route surveys, covering the entire survey.

The project's original coordinate system was the Indiana State Plane Coordinate System East Zone. It was established by performing an Opus solution at CP #1 which resulted in the following values: N:1709333.2349, E:235716.6382, Lat: 39°56'27.17875"N, Long:85°59'45.89717"W. The project was moved to a local, ground system by scaling all data by the Opus solution combination factor of 1.0000555630 (1/X=0.999944440) holding CP #1 as the base point. The data was then translated by subtracting 1,699,333.2349 from all northings and by subtracting 225,716.6382 from all eastings. This resulted in CP#1 having the coordinates of N:10000.0000, E:10000.0000. All distances and coordinates are local, ground distances and coordinates.

NOTE: FOLLOWING THE ORIGINAL SURVEY, THE SURVEY AND DESIGN DATA WAS SHIFTED TO ALLOW CP#1 TO REGAIN THE ORIGINAL, STATE PLANE COORDINATE VALUES: N:1709333.2349, E:235716.6382, Lat: 39°56'27.17875"N, Long:85°59'45.89717"W. MINOR DIFFERENCES BETWEEN TRUE STATE PLANE COORDINATES AND THE CURRENT PROJECT'S COORDINATE SYSTEM MAY OCCUR.

LEGEND

- EXISTING CONTOURS
- STORM SEWER WITH INLET
- SANITARY SEWER WITH MANHOLE
- EXISTING SANITARY FORCEMAIN
- EXISTING GAS
- EXISTING OVERHEAD ELECTRIC WITH POWER POLE
- EXISTING TELEPHONE WITH PEDESTAL
- EXISTING WATER
- EXISTING TREE / SHRUB LINE
- EXISTING PROPERTY LINE
- EXISTING EASEMENT
- EXISTING DECIDUOUS TREE
- EXISTING CONIFEROUS TREE
- EXISTING SIGN
- SECTION CORNER
- TEMPORARY BENCHMARK
- EXISTING SURVEY CONTROL
- EXISTING WOOD FENCE
- EXISTING METAL FENCE
- EXISTING RIPRAP
- PREVIOUSLY IMPACTED WETLAND

UTILITY INFORMATION:

CABLE :
COMCAST
5330 E. 65TH STREET
INDIANAPOLIS, IN 46220
ATTN: TOM SPENCER
(317)752-9426

COMMUNICATIONS:
AT&T INDIANA
5858 N COLLEGE AVE.
INDIANAPOLIS, IN 46220
ATTN: BRIAN CRAVENS
PRIMARY: (317)445-5699
ALTERNATE: (317)371-1155

ELECTRIC :
DUKE ENERGY
100 S. MILL CREEK ROAD
NOBLESVILLE, IN 46062
ATTN: CINDY ROWLAND
(317)431-4762

FIBER:
FIBER TECHNOLOGIES NETWORKS, LLC
800 OLIVER AVE. STE. #1
INDIANAPOLIS, IN 46225
ATTN: DAVID MACDONALD
(585)208-8109

GAS:
VECTREN ENERGY
16000 ALLISONVILLE RD.
NOBLESVILLE, IN 46061
ATTN: BRIAN HARGER
(317)776-5534

SANITARY:
HAMILTON SOUTHEASTERN UTILITIES
11901 LAKESIDE DRIVE
FISHERS, IN 46038
ATTN: JIM HART
(317)577-2300

STORM:
TOWN OF FISHERS
1 MUNICIPAL DRIVE
FISHERS, IN 46038
ATTN: TAMI OTTO
(317)595-3160

WATER:
CITIZENS ENERGY GROUP
1220 WATERWAY BOULEVARD
INDIANAPOLIS, IN 46202
ATTN: CHRIS BRUMFIELD
(317)263-6382

4/26/17

Know what's below. Call before you dig.

CHRISTOPHER B. BURKE ENGINEERING, LLC
PNC Center, Suite 1368 South
115 West Washington Street
Indianapolis, Indiana 46204
(317) 266-8000 FAX: (317) 632-3306

PROJECT:
MUD CREEK WETLAND MITIGATION
HAMILTON COUNTY, INDIANA

NO.	DATE	NATURE OF REVISION	CHKD.
1	4/26/17	ISSUED FOR BID	BJM
FILE NAME	R:\2016\16-0411.00000\CAD\DGN Files\20170405\160411_EX1.dgn		

DSGN.		BJM
DWN.		DJW
CHKD.		BWM
SCALE:		AS NOTED
DATE:		4/26/2017

BRIAN J. MEUNIER REGISTERED No. PE11300321 STATE OF INDIANA PROFESSIONAL ENGINEER

TITLE:
EXISTING CONDITIONS

PROJECT NO. 19.R160411.00000
SHEET 3 OF 10
DRAWING NO. EX1

106th STREET

CUMBERLAND ROAD

MUD CREEK

WETLAND POD 'A'

WETLAND POD 'B'

CONSTRUCTION ENTRANCE (1 / SW3)

WORK TO BE COMPLETED THIS PHASE

WORK TO BE COMPLETED AT A LATER DATE

TRAIL TO TIE INTO ROUND-ABOUT WALKWAY

OPEN WATER (NO SEED MIX) (2 / MD3)

SEE DETAIL 2 FOR LIVE PLANT MATERIAL DETAIL

TEMPORARY WETLAND BUFFER

FOOTBRIDGE (TYP)

2 / SW3 SILT FENCE

SF

12" RCP

10" PVC

WETLAND POD 'A' MITIGATION

FORESTED WETLAND: 0.200 ACRES
EMERGENT WETLAND: 0.087 ACRES

WETLAND POD 'B' MITIGATION

FORESTED WETLAND: 0.250 ACRES
EMERGENT WETLAND: 0.066 ACRES

* THE ENTIRE CONSTRUCTION LIMITS ARE WITHIN THE FLOODWAY *
CONTRACTOR SHALL NOT STOCKPILE OR STORE MATERIALS WITHIN THE FLOODWAY

CONSTRUCTION NOTE

CONSTRUCTION ITEMS NOT HALF-TONED REPRESENT WORK TO BE COMPLETED AS PART OF THIS PHASE. REMAINING WORK (HALF-TONED) TO BE COMPLETED BY OTHERS AT A LATER DATE.

WORK TO BE COMPLETED BY CONTRACTOR UNDER CURRENT CONTRACT:

1. INSTALLATION AND MAINTENANCE OF TEMPORARY EROSION CONTROL MEASURES
2. INSTALLATION OF CONSTRUCTION ENTRANCE
3. TOPSOIL CLEARING, MASS GRADING, FINE GRADING, TOPSOIL PLACEMENT, AND MICRO-GRADING INSIDE AREA IDENTIFIED AS 'DEED RESTRICTED AREA'
4. INSTALLATION OF LIVE PLANT MATERIAL, TREES, SHRUBS, AND SEEDING
5. INSTALLATION OF ENVIRONMENTAL SIGNAGE ("DO NOT MOW, DO NOT SPRAY" SIGNS)
6. INSTALLATION OF PERMANENT EROSION CONTROL MEASURES
7. REMOVAL OF TEMPORARY EROSION CONTROL MEASURES

WORK TO BE COMPLETED BY OTHERS UNDER SEPARATE CONTRACT:

1. INSTALLATION OF PEDESTRIAN TRAIL SUBBASE, HMA, AND FOOTBRIDGES
2. EARTHWORK OUTSIDE OF 'DEED RESTRICTED AREA'

SURVEYOR NOTES:

A) The locations of all existing underground utilities shown on this plan are based upon above ground evidence (including, but not limited to, manholes, inlets, valves, and marks made upon the ground by others) and are speculative in nature. There may also be other underground utilities for which there is no above ground evidence or for which no above ground evidence was observed. The exact location of existing underground utilities shall be verified by the contractor prior to any and all construction.

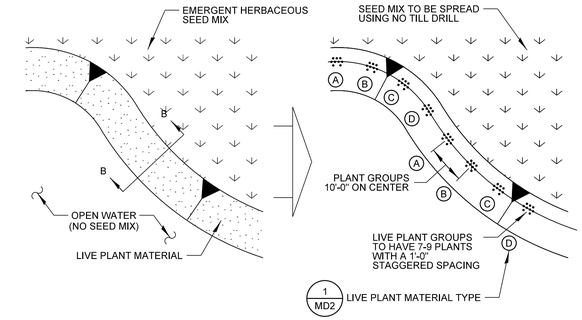
B) The Vertical datum for this project is based on NAVD 88 and the Horizontal datum is based on Indiana State Plane Coordinates, West Zone, both were established from GPS observations.

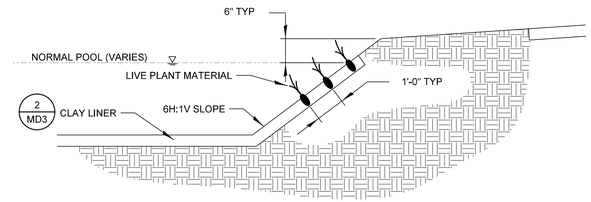
C) Field Survey Date: 9/14/2010

30 0 30
SCALE: 1"=30'

LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- MAG NAIL
- EXISTING SPOT ELEVATION
- TEMPORARY BENCHMARK
- PROPOSED SPOT ELEVATION
- GUY ANCHOR
- SILT FENCE
- POWER POLE
- FLOW ARROW
- OVERHEAD UTILITY
- SIGN (1 / 3 MD2 — SIGN NUMBER)
- EMERGENT HERBACEOUS SEED MIX
- NATIVE GRASS SEED MIX
- WETLAND FOREST SEED MIX (1 / MD2)
- LIVE PLANT MATERIAL (1 / MD2)
- CONSTRUCTION ENTRANCE
- DEED RESTRICTED AREA
- NEW MULIT-USE TRAIL

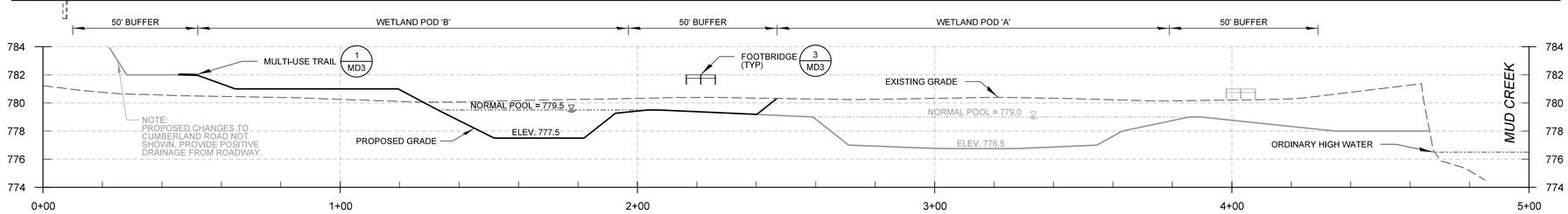




LIVE PLANT MATERIAL DETAIL

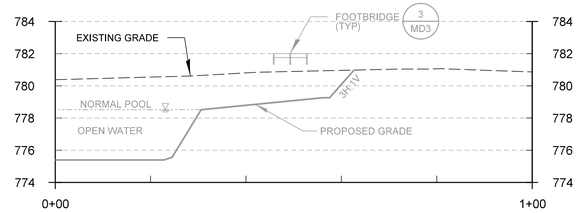
2 SECTION B-B

NOT TO SCALE



1 SECTION A-A

NOT TO SCALE



3 SECTION C-C

NOT TO SCALE

4/26/17

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PNC Center, Suite 1368 South
115 West Washington Street
Indianapolis, Indiana 46204
(317) 266-8000 FAX: (317) 632-3306

PROJECT:

MUD CREEK WETLAND MITIGATION

HAMILTON COUNTY, INDIANA

NO.	DATE	NATURE OF REVISION	CHKD.
1	4/26/17	ISSUED FOR BID	BJM

FILE NAME: R:\2016\16-0411.00000\CAD\DGN Files\20170405\160411_MD1.dgn

DSGN.		BJM
DWN.		DJW
CHKD.		BWM
SCALE:	AS NOTED	
DATE:	5/22/2017	

BRIAN J. MEUNIER · REGISTERED · No. PE11300321 · STATE OF INDIANA · PROFESSIONAL ENGINEER

TITLE:

WETLAND LAYOUT

PROJECT NO. 19.R160411.00000
SHEET 4 OF 10
DRAWING NO. MD1

Seed Mix A - Emergent Herbaceous Seed Mix

Common Name	Scientific Name	Ounces/Acre
Grasses and Sedges:		
Bristly Sedge	*Carex comosa*	4
Porcupine Sedge	*Carex hystericina*	2
Lurid Sedge	*Carex lurida*	4
Fox Sedge	*Carex vulpinoidea*	5
Blunt Spike Rush	*Eleocharis obtusa*	2
Rice Cut Grass	*Leersia oryzoides*	2
Soft Rush	*Juncus effusus*	0.5
Hard-Stemmed Bulrush	*Scirpus acutus*	2
Dark Green Bulrush	*Scirpus atrovirens*	0.5
Softstem Bulrush	*Scirpus validus*	2
Forbs:		
Sweet Flag	*Acorus americanus*	2
Water Plantain	*Alisma subcordatum*	2
Marsh Milkweed	*Asclepias incarnata*	3
False Aster	*Boltonia latisquama*	2
Spotted Joe-Pye Weed	*Eupatorium maculatum*	2
Autumn Sneezeweed	*Helenium autumnale*	2
Swamp Rose Mallow	*Hibiscus palustris*	2
Blue Flag	*Iris virginica shrevei*	2
Cardinal Flower	*Lobelia cardinalis*	0.5
Great Blue Lobelia	*Lobelia siphilitica*	0.5
Water Horehound	*Lycopus americanus*	2
Monkeyflower	*Mimulus ringens*	1
Arrow Arum	*Peltandra virginica*	10
Ditch Stonecrop	*Penthorum sedoides*	1
Pickerel Weed	*Pontedaria cordata*	6
Common Arrowhead	*Sagittaria latifolia*	2
Giant Burreed	*Sparganium eurycarpum*	4
Blue Vervain	*Verbena hastata*	2

Seed Mix B - Native Grass Seed Mix

Common Name	Scientific Name	Ounces/Acre
***Graminoids*:**		
Big Bluestem	*Andropogon gerardii*	16
Canada Wild Rye	*Elymus canadensis*	32
Virginia Wild Rye	*Elymus virginicus*	12
Switchgrass	*Panicum virgatum*	4
Little Bluestem	*Schizachyrium scoparium*	32
Indian Grass	*Sorghastrum nutans*	16
Forbs:		
Smooth Aster	*Aster laevis*	1
New England Aster	*Aster novae-angliae*	2
White False Indigo	*Baptisia leucantha*	2
Wild Senna	*Cassia hebecarpa*	2
Tall Coreopsis	*Coreopsis tripteris*	2
Purple Coneflower	*Echinacea purpurera*	4
Rattlesnake Master	*Eryngium yuccifolium*	3
Sawtooth Sunflower	*Helianthus grosseserratus*	1
Western Sunflower	*Helianthus occidentalis*	1
False Sunflower	*Heliopsis helianthoides*	3
Prairie Blazing Star	*Liatris pycnostachya*	1
Bergamot	*Monarda fistulosa*	0.5
Foxglove Beardtongue	*Penstemon digitalis*	0.5
Purple Prairie Clover	*Petalostemum virginianum*	1
Prairie Cinquefoil	*Potentilla arguta*	1
Mountain Mint	*Pycnanthemum virginianum*	0.5
Yellow Coneflower	*Ratibida pinnata*	4
Black-Eyed Susan	*Rudbeckia hirta*	4
Sweet Black-Eyed Susan	*Rudbeckia submentosa*	3
Rosinweed	*Silphium integrifolium*	2
Compass Plant	*Silphium laciniatum*	2
Prairie Dock	*Silphium terebinthinaceum*	2
Stiff Goldenrod	*Solidago rigida*	2
Riddell's Goldenrod	*Solidago riddellii*	1
Tall Ironweed	*Vernonia altissima*	2
Culver's Root	*Veronicastrum virginicum*	0.5
Temporary Cover:		**Pounds/Acre**
Seed Oats	*Avena sativa*	25
Annual Rye Grass	*Lolium perenne*	25

Seed Mix C - Wetland Forest Seed Mix

Common Name	Scientific Name	Ounces/Acre
Grasses and Sedges:		
Tall Brome	*Bromus latiglumis*	2
Frank's Sedge	*Carex frankii*	2
Spreading Oval Sedge	*Carex normalis*	1
Fox Sedge	*Carex vulpinoidea*	2
Wood Reed	*Cinna arundinacea*	2
Fowl Manna Grass	*Glyceria striata*	1
Bottlebrush Grass	*Hystrix patula*	4
Riverbank Wild Rye	*Elymus riparius*	8
Virginia Wild Rye	*Elymus virginicus*	4
Forbs & Wildflowers:		
Wingstem	*Actinomeris alternifolia*	2
Calico Aster	*Aster lateriflorus*	2
Panicled Aster	*Aster simplex*	1
Hairy Wood Mint	*Blephilia hirsuta*	1
False Sunflower	*Heliopsis helianthoides*	2
Great Blue Lobelia	*Lobelia siphilitica*	0.5
Branched Coneflower	*Rudbeckia triloba*	2
Tall Coneflower	*Rudbeckia laciniata*	2
Cupplant	*Silphium perfoliatum*	2
Late Goldenrod	*Solidago gigantea*	1
Temporary Cover:		**Pounds/Acre**
Seed Oats	*Avena sativa*	32
Annual Rye Grass	*Lolium perenne*	10
Timothy	*Phleum pretense*	2

Group	Common Name	Scientific Name
A	Blue Flag	*Iris virginica shrevei*
B	White Water Lily	*Nymphaea alba*
C	Pickerel Weed	*Pontedaria cordata*
D	Giant Burreed	*Sparganium eurycarpum*

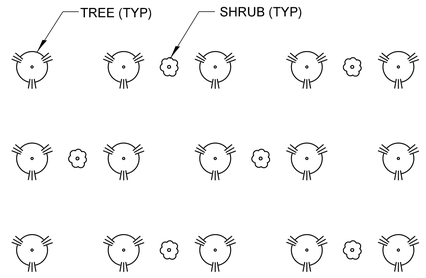
PLANTING SPECIFICATIONS

Trees

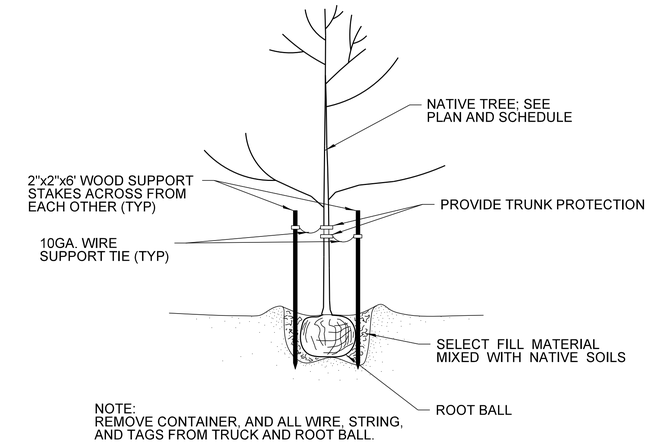
- All trees must be obtained from within 200 miles of the project site.
- Planting should occur in the fall between the months of September and November, or in the spring before leaves are present.
- The above ground portions of each plant shall be healthy and vigorous, and free of disease, discoloration, infestation or deformity.
- Containers or burlap shall be free of any plant species not specified below; specifically weedy, noxious, invasive, and/or non-native species.
- The hole for the plant should be dug to a width that is twice the diameter of the root ball, but only as deep.
- If roots have spiraled around the pot, use a knife to slice down the sides of the root ball in 3 to 4 places. If tree is balled and burlap, cut the burlap away from the trunk of the tree before installation.
- Before planting the tree or shrub, prune it to remove any damaged branches.
- When planted, the tree or shrub should be at or slightly above ground level.
- Straighten the plant and backfill with topsoil. Be sure to eliminate air pockets, and water immediately after installation.
- Proper tree staking should be utilized where necessary.

1 SEED MIXES
NOT TO SCALE

Common Name	Scientific name	Wetland Indicator	Tree/Shrub	Quantity for Wetland Pod 'A'	Quantity for Wetland Pod 'B'
Hackberry	*Celtis occidentalis*	FAC	Tree	9	11
Spicebush	*Lindera benzoin*	FACW	Shrub	4	5
American Sycamore	*Platanus occidentalis*	FACW	Tree	9	11
Swamp White Oak	*Quercus bicolor*	FACW	Tree	9	11
Bur Oak	*Quercus macrocarpa*	FAC	Tree	9	11
American Elm	*Ulmus americana*	FACW	Tree	9	11
Gray Dogwood	*Cornus racemosa*	FACW	Shrub	4	5
Buttonbush	*Cephalanthus occidentalis*	OBL	Shrub	4	5
River Birch	*Betula nigra*	FACW	Tree	9	11
Shumard Oak	*Quercus shumardii*	FACW	Tree	9	11
Black Chokeberry	Aronia melanocarpa	FACW	Shrub	4	5
				79	**97**

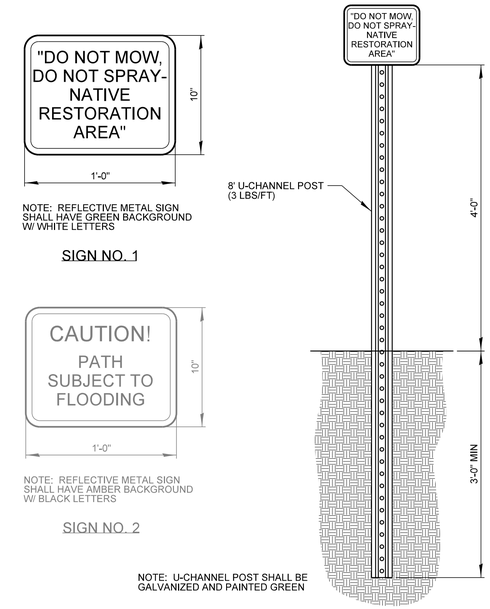


NOTE:
TREES SHALL BE PLANTED AT 12-FT ON CENTER. SHRUBS SHALL BE PLANTED BETWEEN EVERY OTHER TREE (6-FT FROM THE NEAREST 12-FT O.C. TREE SPACING).



NOTE:
REMOVE CONTAINER, AND ALL WIRE, STRING, AND TAGS FROM TRUCK AND ROOT BALL.

2 TREE AND SHRUB DETAILS
NOT TO SCALE



3 SIGN MOUNTING TYPE 'A'
NOT TO SCALE

CONSTRUCTION NOTE

CONSTRUCTION ITEMS NOT HALF-TONED REPRESENT WORK TO BE COMPLETED AS PART OF THIS PHASE. REMAINING WORK (HALF-TONED) TO BE COMPLETED BY OTHERS AT A LATER DATE.

4/26/17

CHRISTOPHER B. BURKE ENGINEERING, LLC
PNC Center, Suite 1368 South
115 West Washington Street
Indianapolis, Indiana 46204
(317) 266-8000 FAX: (317) 632-3306

PROJECT:
MUD CREEK WETLAND MITIGATION
HAMILTON COUNTY, INDIANA

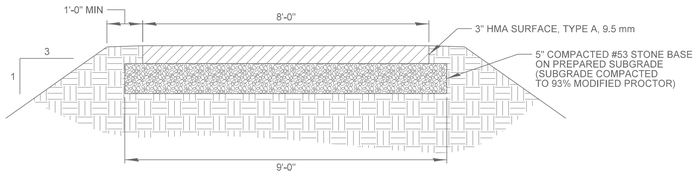
NO.	DATE	NATURE OF REVISION	CHKD.
1	4/26/17	ISSUED FOR BID	BJM
FILE NAME	R:\2016\16-0411.00000\CAD\DGN Files\20170405\160411_MD2.dgn		

DSGN.		BJM
DWN.		DJW
CHKD.		BWM
SCALE:	AS NOTED	
DATE:	4/26/2017	

BRIAN J. MEUNIER REGISTERED No. PE11300321 STATE OF INDIANA PROFESSIONAL ENGINEER

TITLE:
WETLAND AND SIGNAGE DETAILS

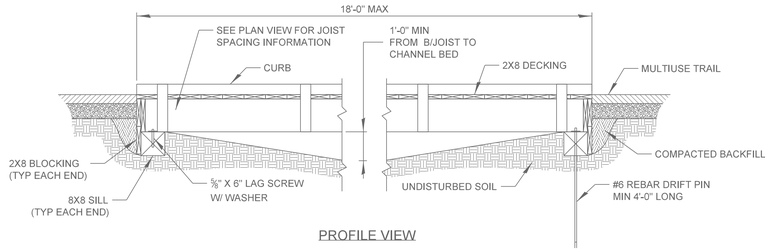
PROJECT NO. 19.R160411.00000
SHEET 5 OF 10
DRAWING NO. MD2



CITY OF FISHERS STANDARD DRAWING

1 MULTI-USE TRAIL TYPICAL DETAIL

NOT TO SCALE



PROFILE VIEW

LOADING & DESIGN CRITERIA:

1. ANY MODIFICATIONS TO THIS PLAN MUST BE APPROVED BY ENGINEER
2. GROUND SNOW LOAD: Pg = 70 PSF (REDUCED IN COMBINATION WITH PEDESTRIAN LOAD)
3. DECK LIVE LOAD: PEDESTRIAN (AASHTO) = 85 PSF
4. STRINGER LIVE LOAD DEFLECTION LIMIT: L / 360
5. BRIDGE STRUCTURE SHALL MEET ADA REQUIREMENTS. MAXIMUM SPACING BETWEEN PLANKS MUST NOT EXCEED ½" AFTER SEASONING.

LUMBER:

1. LUMBER FOR STINGERS, DECKING, CURB, POSTS, SILL, AND BLOCKING SHALL BE NO. 2 (OR BETTER) PRESSURE TREATED SOUTHERN YELLOW PINE
2. DRAWINGS ARE PREPARED USING S4S FINISHED DIMENSIONS UNLESS NOTED OTHERWISE. IF ROUGH SAWN LUMBER IS USED, ADJUST DIMENSIONS AS REQUIRED
3. ALL LUMBER SHALL BE SAWN AND FABRICATED PRIOR TO PRESSURE TREATMENT WITH RESPECTIVE PRESERVATIVE

HARDWARE:

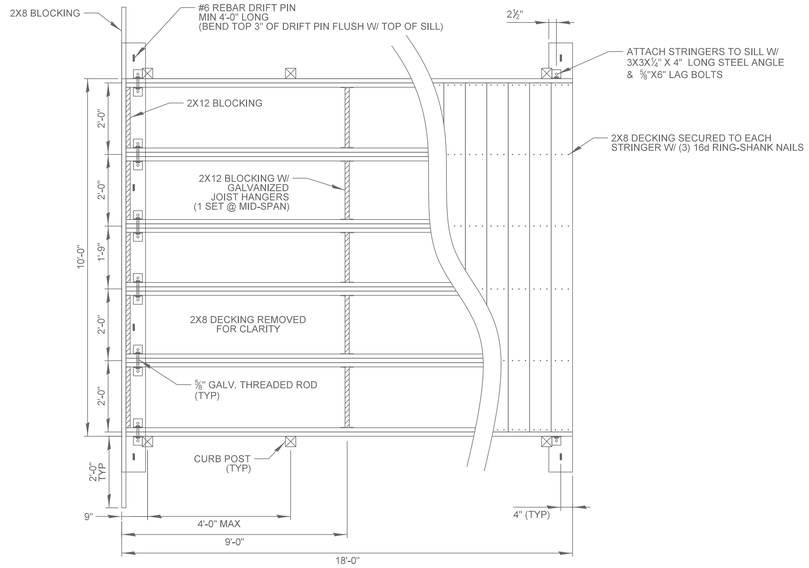
1. ALL BOLTS, WASHERS, NUTS, AND MISCELLANOUS METAL HARDWARE SHALL BE ASTM 307 HOT DIPPED GALVANIZED
2. FASTENERS SHALL BE HOT DIPPED GALVANIZED RING SHANK NAILS OR WOOD SCREWS. DRIFT PINS SHALL BE DEFORMED NO. 6 REINFORCING BARS MEETING ASTM A615.

GLUE:

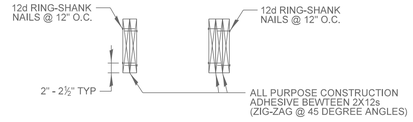
1. APPLY GLUE BETWEEN EACH LAMINATION USING A WATERPROOF EXTERIOR ADHESIVE COMPATIBLE WITH THE PRESERVATIVE TREATMENT SUCH AS PL-500 BY CONTECH, OR APPROVED EQUAL. APPLY ⅜" CONTINUOUS BEAD @ 1½" O.C.

CONSTRUCTION:

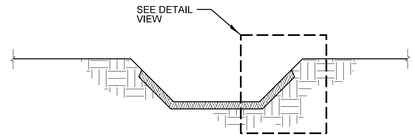
1. SILLS SHALL BEAR ON NATIVE SOIL OR LEDGE ROCK FREE FROM COMPRESSIBLE ORGANIC MATERIAL AND CAPABLE OF SUPPORTING THE BRIDGE UNDER FULL LOAD. PROVIDE UNIFORM BEARING UNDER ENTIRE LENGTH OF SILL.
2. STRINGERS WITH CAMBER SHALL BE POSITIONED SO THAT THE CAMBER IS UP AND KNOTS NEAR THE EDGE WILL BE IN THE TOP HALF OF THE STRINGERS
3. DECKING PLANKS SHALL BE LAID WITH THE HEART SIDE DOWN
4. LAG BOLTS AND LAG SCREWS SHALL BE TIGHENED UNTIL THE WOOD MATERIAL BEGINS TO COMPRESS.



PLAN VIEW

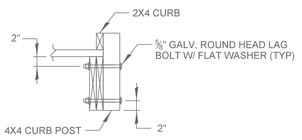


STRINGER DETAIL

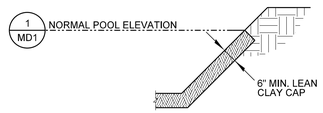


SECTION

NOTE:
LIVE PLANT MATERIAL TO BE INSTALLED AFTER INSTALLATION OF CLAY CAP. SUITABLE TOPSOIL SHALL ENCAPSULATE THE ROOT SYSTEM AND SHALL PENETRATE THE FULL THICKNESS OF THE CLAY CAP.



CURB DETAIL



DETAIL VIEW

2 CLAY CAP DETAIL

NOT TO SCALE

ADAPTED FROM THE U.S. FOREST SERVICE STANDARD PEDESTRIAN BRIDGE DETAILS.

3 TYPICAL FOOTBRIDGE FRAMING DETAILS

NOT TO SCALE

CONSTRUCTION NOTE

CONSTRUCTION ITEMS NOT HALF-TONED REPRESENT WORK TO BE COMPLETED AS PART OF THIS PHASE. REMAINING WORK (HALF-TONED) TO BE COMPLETED BY OTHERS AT A LATER DATE.

4/26/17

CHRISTOPHER B. BURKE ENGINEERING, LLC
PNC Center, Suite 1368 South
115 West Washington Street
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(317) 266-8000 FAX: (317) 632-3306

PROJECT:

MUD CREEK WETLAND MITIGATION

HAMILTON COUNTY, INDIANA

NO.	DATE	NATURE OF REVISION	CHKD.
1	4/26/17	ISSUED FOR BID	BJM
FILE NAME	R:\2016\16-0411.00000\CAD\DGN Files\20170405\160411_MD3.dgn		

DSGN.		BJM
DWN.		DJW
CHKD.		BWM
SCALE:	AS NOTED	
DATE:	4/26/2017	

BRIAN J. MEINERT REGISTERED No. PE11300321 STATE OF INDIANA PROFESSIONAL ENGINEER

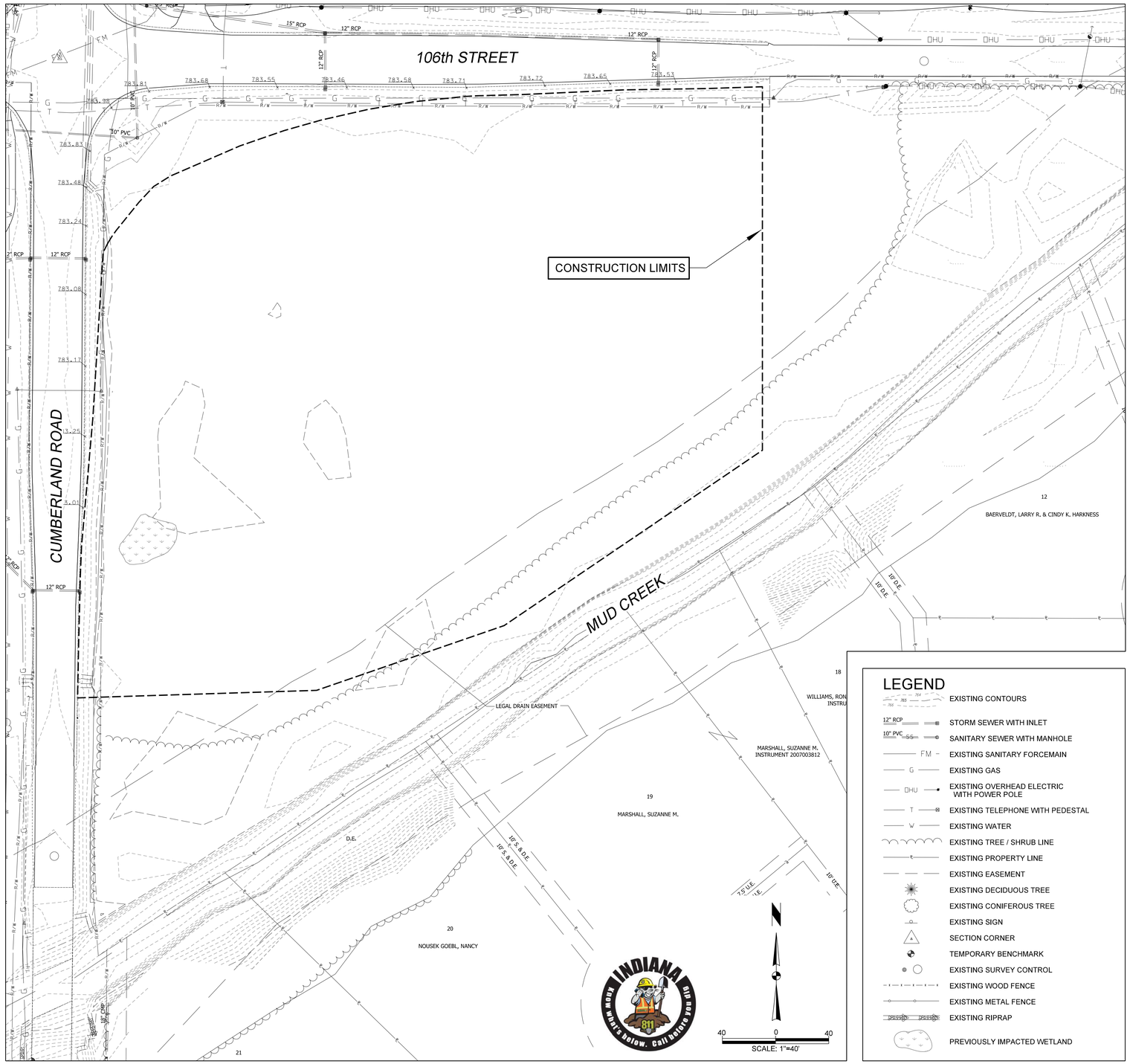
TITLE:

MISCELLANEOUS DETAILS

PROJECT NO. 19.R160411.00000

SHEET 6 OF 10

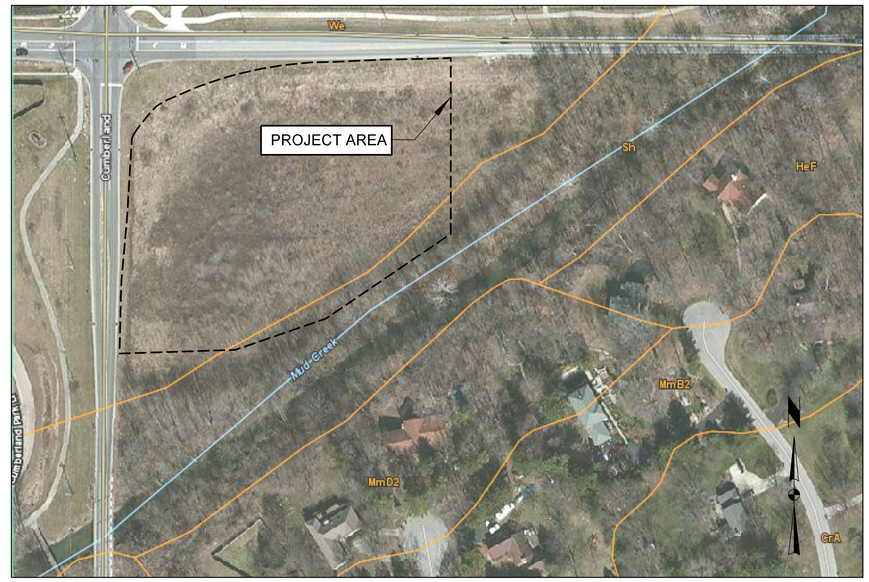
DRAWING NO. MD3



EXISTING SITE

LEGEND

- EXISTING CONTOURS
- STORM SEWER WITH INLET
- SANITARY SEWER WITH MANHOLE
- EXISTING SANITARY FORCEMAIN
- EXISTING GAS
- EXISTING OVERHEAD ELECTRIC WITH POWER POLE
- EXISTING TELEPHONE WITH PEDESTAL
- EXISTING WATER
- EXISTING TREE / SHRUB LINE
- EXISTING PROPERTY LINE
- EXISTING EASEMENT
- EXISTING DECIDUOUS TREE
- EXISTING CONIFEROUS TREE
- EXISTING SIGN
- SECTION CORNER
- TEMPORARY BENCHMARK
- EXISTING SURVEY CONTROL
- EXISTING WOOD FENCE
- EXISTING METAL FENCE
- EXISTING RIPRAP
- PREVIOUSLY IMPACTED WETLAND



SOILS MAP

SOIL DESCRIPTION

Sh – Shoals silt loam

This soil map unit occurs in flood plains. Shoals and similar soils make up 90 percent of soil composition. This somewhat poorly drained soil has a moderate permeability, low shrink-swell potential, and high potential for frost action. The surface runoff is slow. Organic matter content is moderate. The available water capacity is high. The potential for corrosion is high for steel and low for concrete.

Based on soil properties, the Shoals soils are rated somewhat to very limited which signifies that the soil has properties that are moderately favorable for the specified use and the limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. The soil also has properties that are unfavorable for the specified use and the limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected. The Shoals soils are very limited for shallow excavations due to depth of saturated zone, flooding and unstable excavation walls. Shoal soils are very limited for use as pond reservoir area due to seepage. Shoal soils are somewhat limited for paths and trails due to depth to saturated zone, flooding and dust.

We – Westland silty clay loam

This soil map unit occurs in depressions on outwash plains. This poorly drained soil has slow permeability, moderate shrink-swell potential, and high for frost action. The surface runoff is ponded or is very slow. Organic matter content is high. The available water capacity is high. The potential for corrosion is high for steel and low for concrete.

Based on soil properties, the Westland soils are very limited which signifies that the soil has properties that are unfavorable for the specified use and the limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected. Westland soils are very limited for depth to saturated zone, ponding, and unstable excavation walls. Westland soils are very limited for use as pond reservoir area due to seepage. Westland soils are very limited for paths and trails due to depth to saturated zone, ponding, and dust.

PROJECT DESCRIPTION

The purpose of the project will be to construct forested and emergent wetlands to mitigate for wetland disturbance related to the Cyntheanne Road Bridge replacement. Minor grading adjustments are planned to promote an environment suitable for the planned wetland types. A multiuse trail that passes around the perimeter and between the wetland pods will be completed by others at a later date.

PERSON ON-SITE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROL

FARAZ KHAN
1700 S. 10TH STREET
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317-773-7770
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4/26/17

CHRISTOPHER B. BURKE ENGINEERING, LLC
PNC Center, Suite 1368 South
115 West Washington Street
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(317) 266-8000 FAX: (317) 632-3306

PROJECT:
MUD CREEK WETLAND MITIGATION
HAMILTON COUNTY, INDIANA

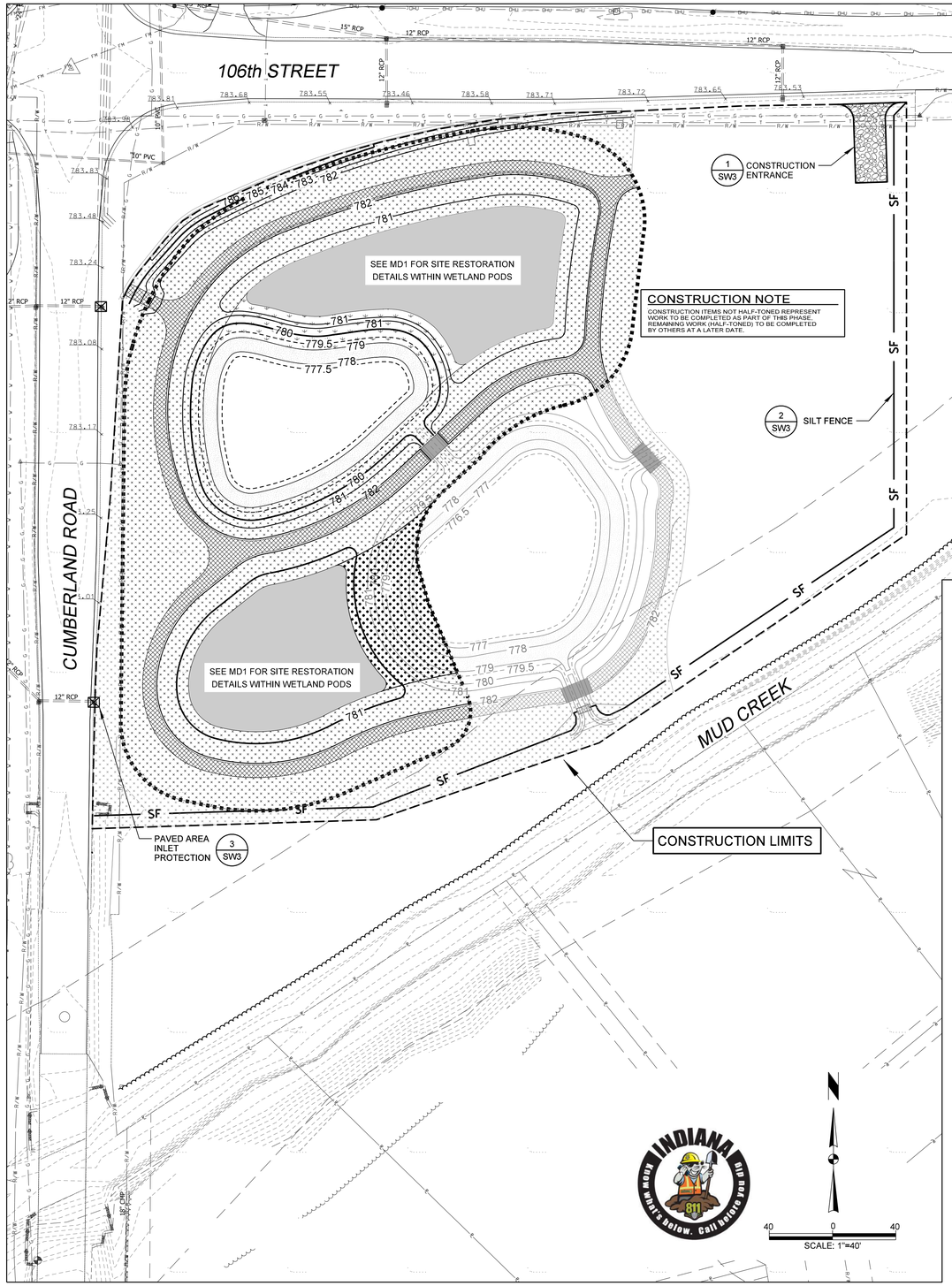
NO.	DATE	NATURE OF REVISION	CHKD.
1	4/25/17	ISSUED FOR BID	BJM
FILE NAME		R:\2016\16-0411.00000\CAD\DGN Files\20170405\160411_SW1.dgn	

DSGN.		BJM
DWN.		DJW
CHKD.		BWM
SCALE:		AS NOTED
DATE:		4/26/2017

BRIAN J. MEUNIER REGISTERED No. PE11300321 STATE OF INDIANA PROFESSIONAL ENGINEER

TITLE:
STORMWATER POLLUTION PREVENTION PLAN
EXISTING CONDITIONS

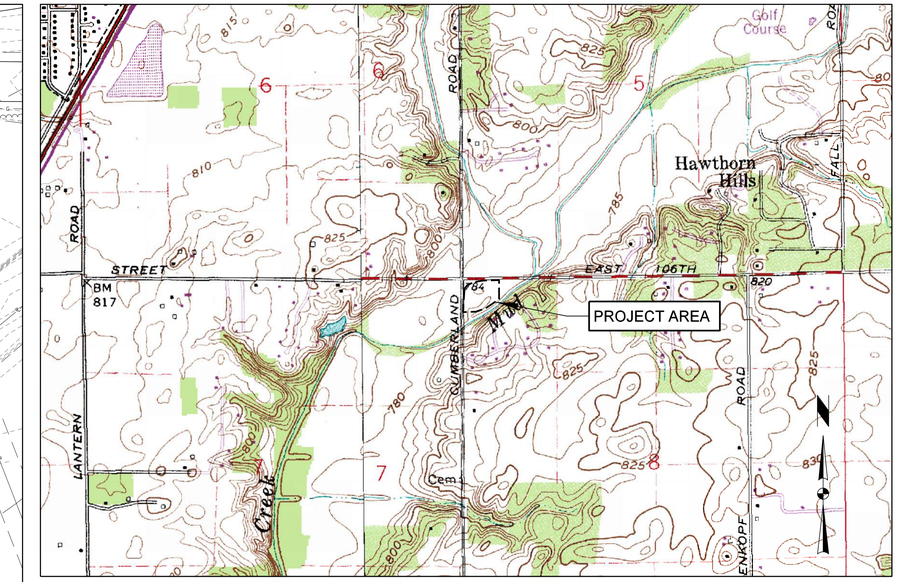
PROJECT NO. 19.R160411.00000
SHEET 7 OF 10
DRAWING NO. SW1



PROPOSED SITE

LEGEND

- EXISTING CONTOURS
- STORM SEWER WITH INLET
- SANITARY SEWER WITH MANHOLE
- EXISTING SANITARY FORCEMAIN
- EXISTING GAS
- EXISTING OVERHEAD ELECTRIC WITH POWER POLE
- EXISTING TELEPHONE WITH PEDESTAL
- EXISTING WATER
- EXISTING TREE / SHRUB LINE
- EXISTING PROPERTY LINE
- EXISTING EASEMENT
- EXISTING DECIDUOUS TREE
- EXISTING CONIFEROUS TREE
- EXISTING SIGN
- SECTION CORNER
- TEMPORARY BENCHMARK
- EXISTING SURVEY CONTROL
- EXISTING WOOD FENCE
- EXISTING METAL FENCE
- EXISTING RIPRAP
- PREVIOUSLY IMPACTED WETLAND
- PROPOSED CONTOURING
- CONSTRUCTION LIMIT
- SILT FENCE (2 SW3)
- DEED-RESTRICTED AREA
- PAVED AREA INLET PROTECTION (3 SW3)
- MULTI-USE TRAIL (1 MD3)
- CONSTRUCTION ENTRANCE (1 SW3)
- NATIVE GRASS SEED MIX & ECB (1 MD2, 1 SW4)
- WELANT FOREST SEED MIX (1 MD2)



USGS MAP

CHECKLIST

Part A - Assessment of Construction Plan Elements

A1 A plan index is hereby provided.

A2 A vicinity map, in lieu of a reduced sized plat, is provided on Cover Sheet.

A3 The purpose of the project will be to construct wetland areas to compensate for impacts resulting from the improvements to the Cyntheanne Road Bridge crossing, as well as the addition of a multiuse trail.

A4 A vicinity map is provided on Sheet SW1.

A5 The project site is located in the northwest quarter section of Section 8, Township 17 North, Range 5 East, in Fall Creek Township, Hamilton County, Indiana – LAT: 39°56'24"; LONG: -86°59'42".

A6 Refer to Sheet MD1 for the location of proposed site modifications.

A7 14-digit Hydrologic Unit Code: 05120201110040.

A8 The following permits will be required for this project: the Indiana Department of Natural Resources (Construction in a Floodway Submittal), the Indiana Department of Environmental Management (401 and Rule 5 Submittal), the U.S. Army Corps of Engineers (404), the Hamilton County Surveyor's Office (Stormwater Permit), the Hamilton County Soil and Water Conservation District (Rule 5 Submittal. The permitting authority for the Rule 5 permit submittal is the Indiana Department of Environmental Management (IDEM), under the authority of the Environmental Protection Agency (EPA).

A9 Stormwater from the construction areas will drain into Mud Creek.

A10 Waterway adjacent to the site: Mud Creek.

A11 Mud Creek is the receiving waters for this project.

A12 There are no known potential discharges to groundwater.

A13 The project site is within the floodway as shown on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for Hamilton County, Indiana and Incorporated Areas, Map Number 18057C0255F, effective date February 19, 2003.

A14 The peak 10-year and 100-year discharges from the site will not change significantly due to land use or surface cover.

A15 Land uses adjacent to the construction site are as follows:
North – Commercial areas and recreational open space
South – Residential areas
East – Residential areas
West – Residential areas and recreational open space

A16 Refer to Sheet MD1 for the location and limits of all disturbed areas.

A17 The existing vegetative cover is primarily grass and lightly wooded areas.

A18 Refer to Sheet SW1 for soils map and descriptions.

A19 The stormwater system consists of constructed wetlands.

A20 Spoil material resulting from the work shall be stockpiled at an offsite location. The location and extent of the stockpile shall be the responsibility of CONTRACTOR. CONTRACTOR shall comply with all state and federal requirements when stockpiling spoil materials.

A21 CONTRACTOR shall not stockpile any material on-site overnight, or during non-working hours. CONTRACTOR shall provide to OWNER a site layout and copies of all required permit approvals for any offsite stockpile or laydown areas.

A22 Existing elevations are found on Sheet EX1.

A23 Proposed elevations are found on Sheet MD1.

Part B – Stormwater Pollution Prevention Plan – Construction Component

B1 Pollutant sources associated with construction activities are: eroded soils and sediments, oils, greases, coolants, petroleum fuels and other fluids associated with the operation of construction machinery, and fertilizers associated with seeding and planting.

B2 Refer to Sheet SW4 for a sequence describing stormwater quality measure implementation relative to land disturbing activities.

B3 Refer to Sheets SW2 and SW3 for the stable construction entrance location and specifications.

B4 Proposed sediment control measures include: silt fencing.
Refer to Sheets SW2 and SW3 for locations, details, and specifications for sediment control measures under sheet flow conditions.

B5 Proposed sediment control measure include erosion control blankets (ECB).
Refer to Sheets SW2 and SW4 for locations, details and specifications for sediment control measures under concentrated flow.

B6 Storm sewer inlet protection measures are detailed on Sheet SW3.

B7 Proposed runoff control measures included: Silt fence and ECB.
Refer to Sheets SW2, SW3, and SW4 for locations, details and specifications for runoff control measures.

B8 Stormwater outlet protection measures are not applicable to this project.

B9 Grade stabilization structures are not proposed for this project.

B10 Refer to Sheets SW2 through SW4 for locations, details, dimensions, and specifications for each stormwater quality measure.

B11 Refer to Sheets SW2 and SW3 for temporary surface stabilization methods.

B12 Refer to Sheets SW2, SW3 and SW4 for permanent surface stabilization methods.

B13 The contractor shall provide a stone surface material staging area. All liquid material shall be stored in a weather-proof, vandalism-resistant enclosure or removed from the site during non-work hours. An on-site fueling area shall be designated away from drainage channels and inlets that would permit the rapid movement of spilled fuel to adjacent waterways. If more than 200 gallons of fuels is stored on-site, appropriate temporary containment facilities shall be installed to prevent mitigation of spills. All materials shall be handled, applied, and disposed in strict accordance with manufacturer's recommendations. Any accidents and spills must be immediately reported to the Indiana Department of Environmental Management by dialing their emergency line: (888)-233-7745 as well as appropriate Hamilton County emergency officials. CONTRACTOR shall begin cleanup of a spill immediately in a manner approved by IDEM. For the purpose of a spill, the contractor is considered the permittee in charge of the site during the time of the spill throughout the construction period.

B14 Refer to Sheets SW3 and SW4 for monitoring and maintenance guidelines for each proposed stormwater quality measure.

B15 Erosion and sediment control specifications for individual building lots are not applicable for this project.

Part C – Stormwater Pollution Prevention Plan – Post Construction Component

C1 The pollutant sources associated with the proposed land use include, but are not limited to, eroded soils and sediments, trash from littering and other types of improper disposal or storage.

C2 Refer to Sheet SW4 for the sequence of the installation of the post-construction stormwater quality measures.

C3 The post-construction stormwater quality measures include a dense vegetative cover over all disturbed areas. Non-impervious areas will be permanently seeded. Refer to Sheets SW2 and SW4 for post-construction stormwater quality measures.

C4 Refer to Sheets SW2 and SW4 for locations, details, dimensions, and specifications for each post-construction stormwater quality measure.

C5 Refer to Sheet SW4 for maintenance guidelines for post-construction stormwater quality measures. The owner will be responsible for future long-term maintenance.

4/26/17

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PROJECT:
MUD CREEK WETLAND MITIGATION
HAMILTON COUNTY, INDIANA

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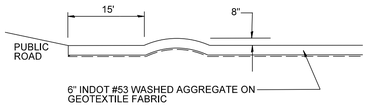
BRIAN J. MEUNIER REGISTERED No. PE11300321 STATE OF INDIANA PROFESSIONAL ENGINEER

TITLE:
STORMWATER POLLUTIOIN PREVENTION PLAN PROPOSED CONDITIONS

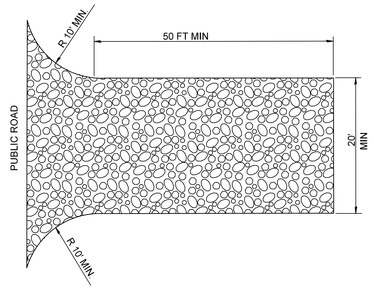
PROJECT NO. 19.R160411.00000
SHEET 8 OF 10
DRAWING NO. SW2

CONSTRUCTION NOTE

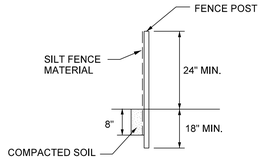
CONSTRUCTION ITEMS NOT HALF-TONED REPRESENT WORK TO BE COMPLETED AS PART OF THIS PHASE. REMAINING WORK (HALF-TONED) TO BE COMPLETED BY OTHERS AT A LATER DATE.



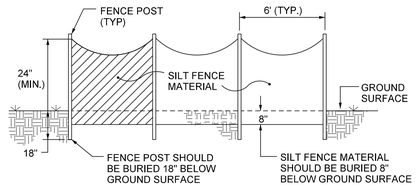
SECTION



PLAN

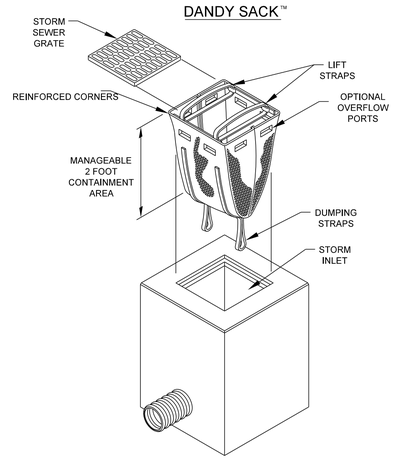


SIDE VIEW



ELEVATION

DANDY SACK™



ISOMETRIC VIEW

STABILIZED CONSTRUCTION ENTRANCE

Requirements:

1. Construction entrance material shall be 6 inches of washed stone (INDOT No. 53) on geotextile fabric.
2. Construction entrance width shall be 20-feet minimum or full width of entrance/exit, whichever is greater.
3. Construction entrance shall have a minimum length of 50-feet.

Installation:

1. Avoid locating on steep slopes or at curves in public roads.
2. Remove all vegetation and questionable material from the foundation area, and grade and crown for positive drainage.
3. If slope towards road exceeds 2%, construct a 6–8-inches high water bar (ridge) with 3:1 side slopes across the foundation area about 15-feet from the entrance to divert runoff away from the road.
4. Install pipe under pad if needed to maintain proper public road drainage.
5. Geotextile underliner fabric shall be installed on the graded foundation.
6. Place stone to dimensions and grade shown on plans, leaving surface smooth and sloped for drainage.
7. Divert all surface runoff and drainage from the stone pad to a sediment trap or basin.

Maintenance:

Inspect construction access road weekly and after each storm event or heavy use. Reshape as needed for drainage and runoff control. Topdress with clean stone as needed. Immediately remove mud and sediment tracked or washed into public roads by brushing or sweeping. Flushing should only be used if the water is conveyed into a sediment trap or basin. Repair any broken road pavement immediately.

Post-Construction:

Remove construction access road stone and geotextile after construction activities have been completed and approved by the Onsite Representative or Owner. Restore all disturbed area to pre-construction conditions to the satisfaction of ownership. This may require topsoil placement and grading, and seeding; Equipment should remain onsite to accomplish this to the satisfaction of ownership.

SILT FENCE

Requirements:

1. Fence posts shall be buried 18-inches minimum below the ground surface.
2. Fence posts shall be spaced at a maximum of 6-feet laterally.
3. Silt fence fabric shall be buried 8-inches minimum below the ground surface.
4. Fence post shall have a minimum height above the ground surface of 24-inches.

Installation:

1. Dig an 8-inch deep trench along proposed fence line (a trenching machine is needed on long runs).
2. Pound stake in trench 18-inches minimum. Be sure to stretch fabric taut when pounding stakes. (Note: Stake must be on the downhill or downstream side of the fence).
3. Drape loose end of geotextile into trench.
4. Backfill and compact soil on both sides.

Maintenance:

Inspect the silt fence periodically and after each storm event. If fence fabric tears, starts to decompose, or in any way becomes ineffective, replace the affected portion immediately. Remove deposited sediment when it reaches half the height of the fence at its lowest point or is causing the fabric to bulge. Take care to avoid undermining the fence during cleanout. After the contributing drainage area has been stabilized, remove the fence and sediment deposits, bring the disturbed area to grade and stabilize.

PAVED AREA INLET PROTECTION

Requirements:

1. The inlet protection unit shall be a sewn geotextile fabric unit.
2. The unit shall have lifting straps to allow removal of the unit and manual inspection of the storm water system.

Installation:

1. Remove the grate from the inlet and stand on end.
2. Move the top lifting straps out of the way and place the grate into the Dandy Sack in a manner so that the grate is below the top straps and above the lower straps.
3. Insert the grate into the inlet using the lifting straps.

Maintenance:

Inspect the unit after each storm event and on a weekly basis. All accumulated sediment and debris around the unit are to be removed after each storm event. Empty the unit if the containment area is more than 1/3 full of sediment. To empty, utilize the lifting straps to lift the unit out of the inlet. Remove the grate. Transport the unit to an appropriate location for removal of the contents. Reinstall unit as described above.

1 STABILIZED CONSTRUCTION ENTRANCE DETAIL
NOT TO SCALE

2 SILT FENCE DETAIL
NOT TO SCALE

4/26/17

3 PAVED AREA INLET PROTECTION DETAIL
NOT TO SCALE

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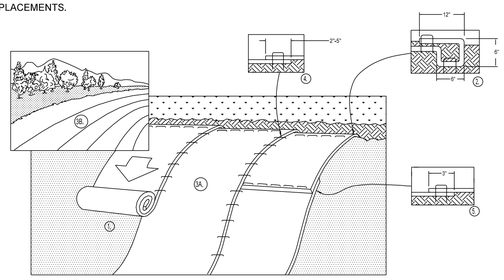
TITLE:
STORMWATER POLLUTION PREVENTION PLAN NOTES AND DETAILS

PROJECT NO. 19.R160411.00000
SHEET 9 OF 10
DRAWING NO. SW3

NOTE:
SEE MANUFACTURER'S STAPLE PATTERN GUIDES FOR ACTUAL RECOMMENDED PLACEMENTS.



SLOPE INSTALLATION

NOTES:

1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP's), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
   a. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECP's IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF RECP's EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP's WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH.BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF RECP's BACK OVER SEED AND COMPACTED SOIL. SECURE RECP's OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE RECP's.
3. ROLL THE RECP's (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. RECP's WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP's MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM , STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL RECP's MUST BE STAPLED WITH APPROXIMATELY 2" - 5" (5 CM - 12.5 CM) OVERLAP DEPENDINGON RECP's TYPE.
5. CONSECUTIVE RECP's SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE (7.5 CM) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30 CM) APART ACROSS ENTIRE RECP's WIDTH.
   a. NOTE: "IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY SECURE THE RECP's.

EROSION CONTROL BLANKET

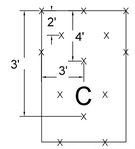
Requirements:
North American Green S150BN erosion control blanket or approved equivalent.

Installation:

1. Begin at the top of the slope by anchoring the blanket in a 6-inch by 6-inch wide trench with approximately 12-inches of blanket extended beyond the up-slope portion of the trench. Anchor the blanket with a row of staples/stakes approximately 12-inches apart in the bottom of the trench. Backfill and compact the trench after stapling.
2. Roll the blanket down the slope, blankets will unroll with the appropriate side against the soil surface. All blankets must be securely fastened to soil surface by placing staples/stakes in appropriate locations as per manufacturer's specifications.
3. The edges of parallel blankets must be stapled with approximately 2- to 5-inches overlap. Place the edges of the overlapping blanket even with the colored seam stitch on the previously installed blanket.
4. Consecutive blankets spliced down the slope must be placed end over end (shingle style) with an appropriate 3-inches overlap. Staple through overlapped area, approximately 12-inches apart across entire blanket width.
5. Install seeding as specified by manufacturer.
6. Install erosion control blanket at locations specified on plans.

Maintenance:
During vegetative establishment, inspect after storm events for erosion below the blanket. If any area shows erosion, pull back the portion of the blanket covering it, add soil, reseed the area, and re-lay and staple the blanket. After vegetative establishment, check the treated area periodically. Add additional staples as necessary to securely anchor the erosion control blanket.

1 EROSION CONTROL BLANKET INSTALLATION
NOT TO SCALE



1.75 STAPLES PER SQ YD
(FOR USE IN AREAS WITH WHERE 3H:1V ≤ SLOPE < 2H:1V)

DETAIL SOURCE: NORTH AMERICAN GREEN

2 EROSION CONTROL BLANKET STAPLE GUIDE
NOT TO SCALE

TEMPORARY VEGETATION

Requirements:
Plant species shall be selected on the basis of quick germination, growth, and time of year. Seeding should be done as often as possible following construction activity. Daily seeding on rough graded areas when the soil is loose and moist is usually most effective.

Installation:
Temporary Seed Bed Preparation:

1. Test soil to determine its nutrient levels.
2. Fertilize as recommended by soil testing. If testing is not done, apply 400-600 lbs/acre of 12-12-12 analysis, or equivalent, fertilizer.
3. Work the fertilizer into the soil 2-4-inches deep with a disc or rake operated across the slope.

Temporary Seeding:

1. Use temporary seed mixed as specified on plans.
2. Apply seed uniformly with a drill or cultipacker-seeder or by broadcasting, and cover to the appropriate depth for the seed used.
3. If drilling or broadcasting, firm the seedbed with a roller or cultipacker.
4. Mulch seeded area to increase seeding success. Anchor all mulch by tackifying.

Maintenance:
Inspect periodically after planting to ensure that vegetative stands are adequately established; reseed if necessary. Check for erosion damage after storm event and repair; reseed and mulch if necessary.

PERMANENT VEGETATION

Requirements:
Plant species shall be selected on the basis of soil type, soil pH, region of the state, time of year, and planned use of the area to be seeded. Follow requirements in Mitigation Plan document for the stream mitigation site.

Installation:
Permanent Seed Bed Preparation:

1. Test soil to determine pH and nutrient levels.
2. If soil pH is unsuitable for the species to be seeded, apply lime according to test recommendations.
3. Till the soil to obtain a uniform seedbed, working the fertilizer and lime into the soil 2-4-inches deep with a disc or rake operated across the slope.

Permanent Seeding:
Optimum seeding dates are March 1 through May 10 and August 10 through September 30. Permanent seeding done between May 10 and August 10 may need to be irrigated. As an alternative, use temporary seeding until the preferred date for permanent seeding.

1. Use seed mix as specified on Sheet MD2.
2. Apply seed uniformly with a drill, cultipacker-seeder, or by broadcast, and cover to a depth of ¼ to ½-inches.
3. If drilling or broadcasting, firm the seedbed with a roller or cultipacker.
4. Mulch all seeded areas and anchor with a tackifyer. Use erosion control blankets on areas sloping 4:1 or steeper if erosion becomes a problem or if directed by the ENGINEER. (Note: if seeding is done with a hydroseeder, fertilize and mulch can be applied with the seed in a slurry mixture).

Maintenance:
Inspect periodically, especially after storm events, until the stand is successfully established (characteristics of a successful stand include: vigorous dark green or blue-ish green seedings; uniform density with nurse plants, legumes, and grasses well intermixed; and the perennials remaining green throughout the summer, at least at the plant base). Add fertilizer the following growing season according to soil test recommendations. Repair damaged, bare or sparse areas by filling any gullies, refertilizing, over- or reseeding. If plant cover is sparse or patchy, review the plant material chosen, soil fertility, moisture condition, and mulching after re-preparing the seedbed. If vegetation fails to grow, perform soil testing to determine acidity or nutrient deficiency problems. If additional fertilization is needed to get a satisfactory stand, do so according to soil test recommendations.

3 SEEDING NOTES
NOT TO SCALE

EROSION CONTROL SEQUENCE

1. Before construction, stake the project limits.
2. Install perimeter protection in the form of silt fence around construction limits noted on the plans.
3. Strip topsoil from site as necessary for completion of project, except for the high flow shelf area.
4. Install new construction access road(s). Throughout construction, CONTRACTOR shall control dust on the project site with water trucks. CONTRACTOR shall perform street sweeping as necessary to keep public and private roadways being used as transportation routes clean of dirt, dust, and incidental construction debris.
5. paved area inlet protection as noted on the plans to be completed by others at a later date.
6. Perform all necessary site grading. CONTRACTOR shall minimize size, area of disturbance, and time of exposure.
7. Place seed, fertilizer, and mulch on all remaining disturbed areas, as shown in the drawings.
8. Maintain erosion and sediment practices throughout the duration of the project.
9. Remove all temporary erosion control measures upon OWNER'S approval and after vegetation is established and approved by the ENGINEER.

GENERAL NOTES FOR EROSION AND SEDIMENT CONTROL SEQUENCE

1. The CONTRACTOR shall install, monitor, and maintain all required erosion control measures in accordance with Indiana 327 Rule 5, and the "Indiana Storm Water Quality Manual", which is hereby incorporated in these drawings by reference and made a part thereof.
2. Temporary erosion and sediment control features to prevent sediment from leaving the site shown on the plans are at approximate locations. Erosion control features shall be inspected following each rainfall event. Accumulated sediment shall be removed immediately. Damaged erosion and sediment control features shall be repaired and replaced immediately.
3. Construction debris and waste, such as garbage, debris, cleaning waste, etc., shall be removed from the site and kept out of water courses. Proper disposal and management of all waste is required.
4. The duration of time which an area remains exposed shall be kept to a practical minimum depending on the weather. If construction activity is to cease for more than 14 days, the disturbed areas shall be temporarily seeded.
5. Temporary erosion control features include construction entrance, silt fencing, rock check dam, and vegetation.
6. Permanent vegetation will serve as the only permanent erosion control feature.
7. Permanently stabilize with seed and mulch all disturbed areas that are completed. Place temporary seed and mulch in all disturbed areas that are unable to be permanently seeded.
8. Throughout construction, maintain the erosion control measures as described on the plans.
9. Remove all silt from the project site after permanent vegetation is established; redistribute in appropriate areas or dispose offsite.

4 EROSION CONTROL NOTES
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